THE AUTOMOBILE

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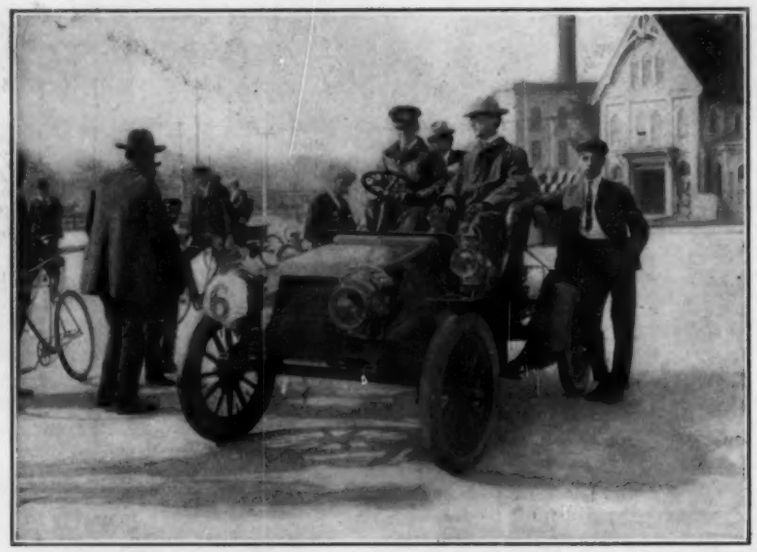
Awards in Colorado Endurance Contest.

Seven Cars make Perfect Scores in 100-Mile Run from Denver to Palmer Lake and Return — Course Sandy with Sharp Turns and Stiff Grade.

DENVER, June 10.—Owing to the fact that so many of the competitors made perfect scores in the endurance contest held on the Palmer Lake course on Memorial Day, the Committee on Awards has been delayed in awarding the prizes. The final report has just been made, however, and it shows a remarkably high average, both as to the endurance qualities of the machines and the skill of the operators. The contest was open to all classes of self-propelled vehicles, and weight, seating capacity, motive power and other points were all considered in making up the final scores.

The Palmer Lake course, which was selected, was famous in the days of bicycle racing. It is 49 1-4 miles in length, with

GETTINC READY FOR THE START OF THE COLORADO ENDURANCE CONTEST — Course 49½ Miles Out, and Return.



WINTON CAR READY TO START IN COLORADO CONTEST.

a rise of 2,000 feet between Denver and Palmer Lake. Most of this rise is between Perry Park and Palmer Lake, a distance of ten miles. The course is very sandy and contains many sharp turns. It is also a "weather" course—that is, it is smooth and hard in fair weather, but very difficult to "buck" after a moderate rain. In establishing the conditions, the judges did not allow for such favorable conditions as prevailed. The course was almost sandpapered, as there had been no rain; whereas, the slightest rainfall a few days before would have put the course in such shape that not a machine would have finished with a clean score.

Controls were established at various points along the route, where a certain number of minutes was allowed for stops to take on water and gasoline. Marks for reliability were given as follows:

	Miles.	Marks.
Denver to Littleton.....	10.50	40
Little to Sedalia.....	14.25	65
Sedalia to Perry Park.....	14.75	70
Perry Park to Palmer Lake.	9.75	55
Palmer Lake to Perry Park.	9.75	40
Perry Park to Sedalia.....	14.75	55
Sedalia to Littleton.....	14.25	60
Littleton to Denver.....	10.50	40
Total.....	99.50	425

There were nineteen entries, but one failed to start and two failed to complete the course before the closing of the last control. Two cars owned by George Hannan were disqualified on the charge that the owner had advertised that his machines had made clean scores before the decision of the judges was announced, and also on the charge that they took gasoline at Palmer Lake. Mr. Hannan says the latter charge is untrue, and that his machines made a world's record in the small consumption of gasoline, but the decision of the judges is nevertheless accepted by him.

Of the fourteen machines actually entering the race and finishing in the time prescribed, seven made perfect scores as follows: C2, Winton; B3, Rambler; B5, Rambler; C6, Winton; B14, White touring car; B15, Autocar; C19, Winton. The awards of prizes, economy plates and certificates are given in the accompanying table.

W. H. Bergtold, chairman of the Committee on Control, declares that the endurance run shows a vast improvement in the manufacture of automobiles. Two years ago such a record could not have been made on the Palmer Lake course, he declares.

It is the intention of Denver automobil ists to hold another endurance contest, probably in the Fall. A run from Denver to Raton, N. M., is contemplated, which will test the merits of any machine ever built. If this run cannot be made the distance will be shortened, but two schedules will be made out, one allowing for a bad course and another for a perfect course. If this had been done for Memorial Day there would have been no delay in awarding prizes and the operators and owners would have been much better satisfied. It is recognized that the gentlemen at the head of the contest acted only in a sportsmanlike manner, however, and there is no disposition to find fault with the awards made.

The contest aroused great local interest, and it shows the rapid growth of the automobile spirit in the Far West.

First Class Certificate Winners.

Class.	No.	Machine.	Type.	Owner.	Driver.	Marks.
C	2	Winton.	Gasoline.	E. H. Huribut.	E. H. Huribut.	425
B	3	Rambler.	Gasoline.	E. R. Cumbe.	E. W. Swansbrough.	425
B	5	Rambler.	Gasoline.	E. R. Cumbe.	George Eyster.	425
C	6	Winton.	Gasoline.	Colo. Auto. Co.	L. Lindahl.	425
C	7	Rochet-Schneider.	Gasoline.	McNell & Penrose.	R. A. Miller.	421
C	8	Winton.	Gasoline.	E. A. Colburn.	H. C. Colburn.	416
A	11	Oldsmobile.	Gasoline.	George Turner.	George Turner.	422
A	14	White. (Tour.)	Steam.	Colo. Motor Carriage Co.	M. R. Hughes.	425
B	15	Autocar.	Gasoline.	G. S. Riche.	F. Riche.	425
B	16	Cadillac.	Gasoline.	A. T. Wilson.	A. T. Wilson.	416
B	18	General.	Gasoline.	Colo. Auto. Co.	Robert Boone.	421
C	19	Winton.	Gasoline.	W. W. Price.	W. W. Price.	425

Second Class Certificate Winners.

B	13	White Delivery.	Steam.	Charles Bilz.	Charles Bilz.	414
B	17	Locomobile.	Steam.	M. J. Patterson.	M. J. Patterson.	408

Prize Winners.

First Prize (Solar Auto. Lamp). C 6 Winton, entered by Colo. Auto Co.
Second Prize (Automobile rain coat). C 19 Winton, entered by W. W. Price.
Third Prize (to be announced later). B 3 Rambler, entered by E. R. Cumbe.

Plates for Fuel Economy.

Class A. No. 11 Olds, entered by George Turner.
Class B. No. 15 Autocar, entered by G. S. Riche.
Class C. No. 7 Rochet-Schneider, entered by McNell & Penrose.

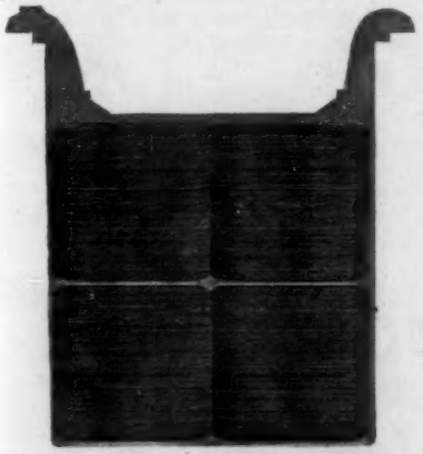
WATCHING THE START OF A FOREIGN CAR IN COLORADO CONTEST.

Storage Battery Principles.

*II—The Plante Process.

BY H. L. TOWLE.

It was stated in the preceding article that only a relatively small proportion, given by Treadwell as about 31 per cent., of the peroxide coating of the positive plates is converted into sulphate in the ordinary lead



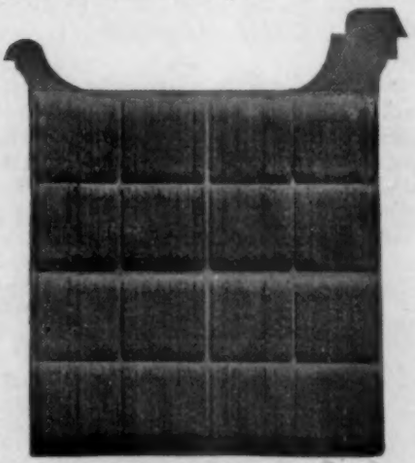
GOULD TYPE M PLATE, UNFORMED.

cell. The lead grid or plate, which weighs at least as much as the active material and generally more, serves no chemical purpose whatever, being employed only to support the active material and conduct the current. How these two facts affect the efficiency of the cell may be seen from the fact that although the energy theoretically contained in one pound of peroxide and spongy lead is about 50 ampere-hours, yet, for the reasons above indicated, only about 16 ampere-hours are available. Reckoning in the weight of the grids, the energy is reduced to 8 ampere-hours or less per pound of plate. When the acid, water, and containing jar are added, the energy practically available is but 4 to 6 ampere-hours per pound of total weight, or about one-eighth of the theoretical energy of the active material plus the acid.

Expressing it in other terms, a 1,000 pound runabout will carry from 500 to 600 pounds of battery, which will propel it at a 10-mile speed for, say, 4 hours on level macadam or asphalt, developing about 1½ horse power at the motor in doing so. That is, the battery will weigh about 100 pounds for each horse power hour, delivered by the motor. These are average results for good modern batteries, and they show very well both why an enormous amount of experimenting has been thought justified in reducing the dead weight of these batteries to the lowest feasible terms, and why there is still such a demand for further improvement.

The progress of battery construction has followed, broadly speaking, two distinct lines, according to the two processes by which lead plates with surfaces of lead peroxide and spongy lead may be produced. These are the Planté or forming process, in which the surface of the lead plates is converted into active material by electrical or electro-chemical treatment; and the Faure or "pasting" process, by which the active material is mechanically applied in the form of a paste. Certain processes, to be examined in detail later, may be regarded as combinations of these two methods.

Historically speaking, the "forming" process antedates the "pasting" by some eighteen years. In 1860, M. Gaston Planté discovered that if two clean lead plates, in a bath of dilute sulphuric acid, were alternately treated by a current from an exter nal source—always in the same direction—and "discharged" through a resistance, a coating of lead peroxide was gradually formed on the surface of one and of spongy metallic lead on the other; the depth to which the metal of the plate was thus con-



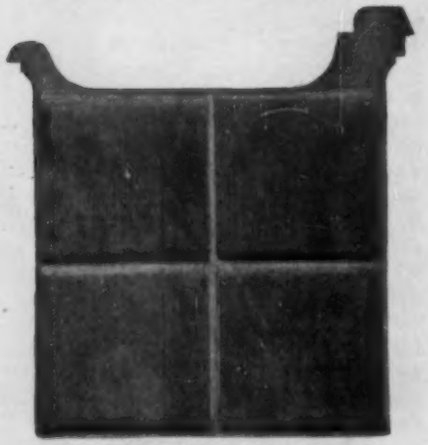
GOULD POSITIVE PLATE, FORMED.

verted into active material depending on the strength and duration of the current, and to a certain extent also on the number of reversals. This was a very tedious process, and by the time the thin sheets used had reached their maximum capacity, they were about rotten. Moreover, as the sheets were smooth, the cell was very bulky for its capacity.

METHOD OF PASTING PLATES.

To save the time thus spent in forming the plates, and also to get around the restriction on capacity imposed by the limited amount of active material which can be electrically formed on a given area of plate, the process was devised of applying a paste of suitable oxides of lead to the plates, drying, and then converting this paste into active material by a single passage of current. For this purpose the paste was composed wholly or in large part of minium or red lead (Pb_3O_4) for the positive plates, and of litharge or lead oxide (PbO) for the negative, with sulphuric acid as the usual moistener. On charging, the litharge is reduced to metallic lead and the minium is raised to the peroxide. This general process may be modified in numerous ways by substituting other oxides, adding small quantities of other materials to act as binders, etc. It was originally invented, about 1878, by R. L. Metzger, in Germany, and by Charles F. Brush in this country; and it is generally known by the name of its French patentee, Camille A. Faure.

As above implied, the especial advantage of the Faure type of plate is that it can receive a larger charge per pound of total weight than the Planté type. On the other hand, the mechanically applied active material does not adhere so strongly to its grid as that formed from the substance of the plate itself. The conversion of this material from sulphate to lead or peroxide and back again involves small but sure changes in volume, and with these recurring changes there is every inducement for the active material to detach itself and fall to the bottom of the cell, or, worse still, by bridging the gap between two plates, to short-circuit them and ruin the cell. If it cannot get away from the plate, and cannot shrink or expand freely, it may bend or "buckle" the plate. This is particularly true when heavy currents are passing. Again, these same heavy currents may cause the formation of gas bubbles under the surface of the active material, particularly on the positive plates, and thus force it out of contact with the gird. Although Planté plates are not free from these classes of trouble, the Faure plates are in general much more subject to them, and for this reason it is customary to say that, while the latter will receive a greater total charge than the former, pound for pound, it is not safe to charge or discharge them as fast or as far. From this it follows that the choice be-



GOULD NEGATIVE PLATE, FORMED.

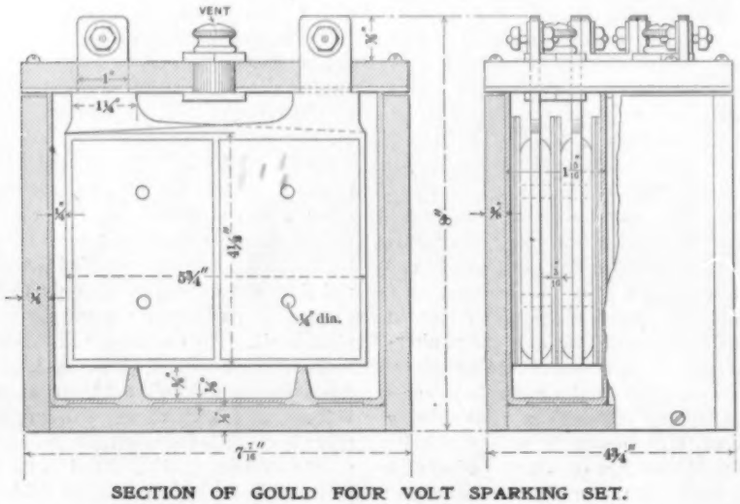
tween the two types will be largely determined by the expected conditions of use.

With the foregoing general view of the subject in mind, it will be of interest to examine the main points of improvement

*The first instalment of this article appeared in the issue of May 30th.

over the original forms of battery, referring where possible to concrete examples.

The most obvious way of increasing the capacity of the Planté plate is to roughen its surface. This process has been carried to its practical limit in some of the best-known American batteries, notably the Gould and Willard. In both of these the plates, originally fairly thick, have had their surfaces grooved and raised into closely-set and deep ribs, the spaces between which are filled with active material by the forming process. Some photographs are shown of the Gould plates, and the Willard plates are quite similar. The makers of the former cell state that the original surface of the plate is increased seventeen times, giving 450 square inches per pound of grid. The capacity is about 3.51 ampere-hours per pound of weight without the tray, for the 7-plate 100-ampere hour automobile cell weighing complete 28½ pounds.



SECTION OF GOULD FOUR VOLT SPARKING SET.

WILLARD AND GOULD BATTERIES.

The makers of the Willard battery claim a surface of 200 square inches per ampere of discharge at the four hour rate. Two discharge curves for this battery are shown in the diagram herewith, which are stated to represent about the average results obtained. It shows a capacity of 4.92 ampere hours per pound at the 4 hour rate. The catalogue rating for this cell is 112 ampere hours at the 4 hour rate, or 4.3 per pound. In both cells perforated hard rubber sheets are employed to separate the plates and prevent buckling and short-circuiting, and the plates and separators make a snug fit in the jars. A partly broken-away cut of the Gould automobile cell shows the support used for the plates, to allow detached active material to drop to the bottom. Some such device is used with nearly all storage cells.

OTHER MODES OF CONSTRUCTION.

It will be evident that many other ways of constructing light plates of large surface could be suggested. One, the subject of a French patent, consists in making the plate of flat coils of lead ribbon, suspended in a lead frame. Another interesting plate, a sample of which has for some time been in the desk of the writer, but which he is unable to identify, is built up of crimped lead ribbon about ¼ inch wide, the planes of the ribbons being perpendicular to that of the plate, and their ends being buried together, forming a solid support. The ribbons are further supported by thick lead wires passing through them at suitable intervals.

An important and very essential improvement in the process of forming Planté plates is the saving of much the largest portion of the time formerly consumed in the electrical formation, by treating the plates in pickling baths which produce in a few hours a thick coating of lead salt or oxide, which may subsequently be converted into active material by a single charging. Originally hot nitric acid was used for this purpose, and it is still largely employed, though usually in conjunction with other chemicals to improve the tenacity of the resulting formation, which with nitric acid alone is rather easily detached from the grids. Instead of forming the plates directly after pickling, the lead salt on their surface may be reduced to spongy lead by treating both sets of plates as negatives in a sulphuric acid bath. The hydrogen set free on them takes up the acid radical of the salt, leaving the metal free. Then the plates are formed as usual, but in a very short time, owing to the free access of the electrolyte to the spongy lead.

Instead of forming a salt on the surface of the plates, an oxide may be formed by suitable treatment in an oxidizing bath. Though the writer has no particulars at hand, he understands that this is the process employed for the positive of the Willard battery. According to a patent issued to its makers some time ago, this oxidizing bath produces in about four hours a coating of pure peroxide of lead which completely fills the grooves.

THE ELETRO-CHEMICAL PROCESS.

A modification of the chemical process of forming plates is the electro-chemical, which consists in subjecting the plates to electric currents in chemical baths. A good example of this method is shown in a patent lately granted to William Gardiner. In the Gardiner battery the unformed plate is composed of a frame of lead, alloyed with antimony to give it stiffness, and an active portion of a pure lead packed into the frame in a finely-divided state. The forming process comprises three stages, each in a different solution, by which the pure lead is first converted into oxide, then reduced to spongy lead, and then "bonded" to the frame in the third bath. In the first two baths the positive and negative plates are treated alike. The first bath consists of a solution of sulphuric acid, to which are added small amounts of sulphate of aluminum, nitrate of ammonia, and oxalic acid. In it the plates are treated as positives, dummy negative electrodes being used. As in ordinary battery charging, ox-

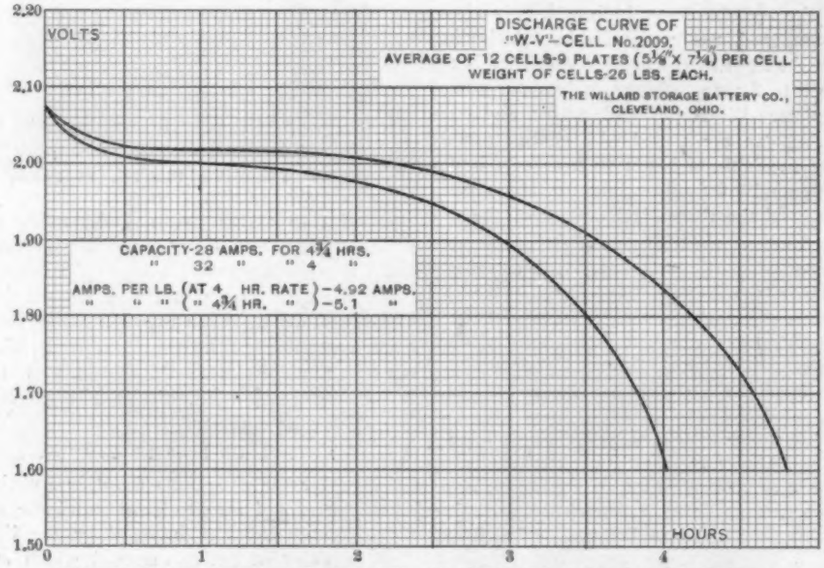


DIAGRAM OF DISCHARGE CURVES OF WILLARD STORAGE BATTERY.

ygen is released on the surface of the positives, where it unites with the lead. The alloy of the frame is meanwhile practically unaffected. When sufficiently oxidized, the plates are treated as negatives in a sulphuric acid solution to which small quantities of tartaric acid and sulphate of magnesia have been added. The hydrogen thus liberated on the plates unites with the oxygen and leaves the lead once more in a pure state, but very spongy. To unite this spongy lead more firmly to its metal support the plates are divided into positives and negatives and "charged" in a solution of sulphite of soda and sulphide of ammonia. This does not change the lead, but gives it greater tenacity. Finally the plates are washed and charged in an ordinary

7-PLATE 100 AMPERE HOUR AUTO CELL.

sulphuric acid solution, when they are ready for service.

The inventor claims that this process effects a great saving of time and gives the greatest practicable degree of porosity to the spongy lead. That it should economize time is evident from the fact that the forming action takes place on a very large surface of powdered lead instead of a smooth plate.

Carl Fisher, of Indianapolis, has promised W. J. Morgan that he will compete in the Florida Beach tournament next Winter wth the new 100-horse power racing machine that was built for him by the Mohawk Company in Indianapolis this Spring.

Starting Lever for Motors.

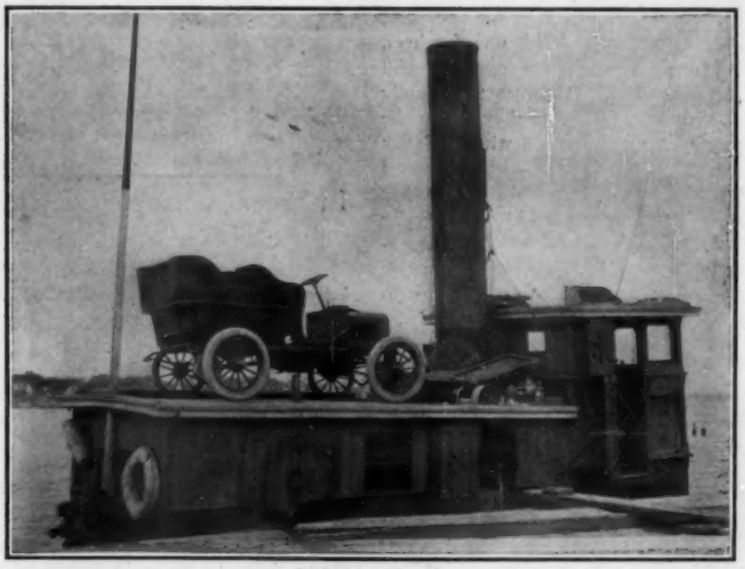
In the three 100 horse power (capable of 120 horse power) Gobron-Brillie cars which took part in the Paris-Madrid race, the starting of the 4-cylinder, 8-piston motor is effected by a long lever instead of a crank, because the turn required is very small, while the force must be considerable, as the compression is high and no relief cock is provided. The lever is put away, after starting, in one of the transverse tubes of the frame. The arrangement is said to be more convenient than cranking. Another peculiarity in these machines is the use of two clutches. One is a lubricated metal clutch, which is thrown in when the vehicle is to be started; it slips freely and avoids all shock to the gears and vehicle. It takes effect when the starting pedal is half depressed; when the pedal is entirely relieved the ordinary leather-faced clutch takes hold. The two clutches are concentric, and the female clutch is double, to correspond. The frame of the Gobron-Brillie is of tubes.

STARTING LEVER ON GOBRON-BRILLIE.

Hobby of a Mariner.

The phosphate-rock steamer J. B. Dallas, of New York, ran into New Haven harbor recently with an up-to-date tonneau touring car on her engine-house roof. The novel sight attracted much attention and comment.

The owner of the machine was W. H. Thomas, of New York, chief engineer of the steamer, who is an ardent motorist as well as a marine engineer. While his calling is for the sea, his liking for the automobile it so great that he built one and carries it with him from port to port. By its use he is enabled to see more of inland country along the Atlantic coast than usually falls to the lot of a salt water sailor. He began the construction of this machine last Fall, at a lathe fixed up by him in his engine room. The machine is modeled after the Peerless, having a long wheel base and a 6¼ horse power gasoline motor. It has three speeds forward, and reverse, direct drive on the high speed, with no idle gears running in mesh, and bevel gear drive.

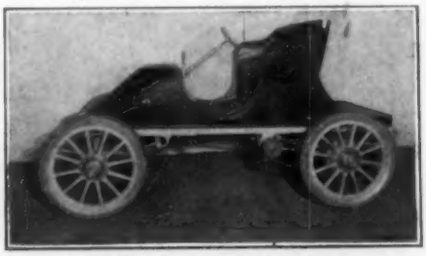


STEAMER "DALLAS" CARRYING ENGINEER'S AUTO ON ENGINE HOUSE.

S. F. Edge, one of the English entrants in the race for the international cup, to take place in Ireland, July 2, states in an interview that he will drive a car that is capable of attaining a speed of eighty miles an hour within thirty seconds after starting. He also asserts that he is able to start it in twenty-eight seconds. He hopes to attain an average speed of fifty miles an hour. He has been over the course twenty-five times.

A Single Cylinder Balanced Engine.

Believers in the single-cylinder gasoline engine for automobile propulsion will find in an engine lately produced in Boston a solution almost mathematically exact of the balancing problem, as regards both mechanical vibration and "torque reaction." In other words, though the engine has but one cylinder and one piston, the tendency of the whole engine to rotate about the



CAR DRIVEN BY SINGLE CYLINDER BALANCED ENGINE.

crank shaft in the direction opposite to the latter's motion, at every power impulse, is exactly neutralized; while the inertia of the reciprocating parts, though not exactly balanced, is much more nearly so than in the ordinary single-cylinder engine.

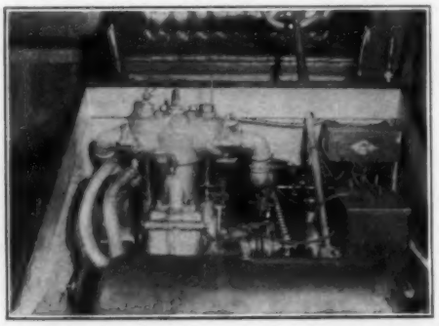
These results are accomplished by means of a construction which is not strictly new, since the principles involved in it have been pretty clearly understood by close students of the subject for several years at least; but which has not, till the present time, found its way into commercial use to any noticeable extent in this country.

Briefly stated, the crux of the whole matter lies in the use of two fly wheels rotating in opposite directions. With one flywheel, as action and reaction are opposite and equal, the explosive impulses act as strongly on the rest of the engine as they do on the flywheel, and the only reason why the latter turns instead of the former is that it is not so heavy and is not bolted down to other objects. That the engine will react as far as its weight and the character of its mounting will let it may be demonstrated in any machine whose motor has an elastic support.

In the engine described, one piston works on two equal connecting rods, which in turn work on crank shafts turning in opposite directions in a common case. Each shaft has its own flywheel, and the power is delivered by a sprocket chain from one of the shafts. A pair of large gears connects with the shafts and transmits its share of power from the second shaft to the first. Strictly speaking, therefore, there can be no sensible reaction of the engine to its own impulses; though this must be distinguished from the pull on the chain which will come at each impulse. The piston is balanced by counterweights equally divided between the two pairs of cranks. Except for the angularity of the connecting rods, a perfect balance should be thus obtained, since the lateral inertia forces of these counterweights, being exerted in opposite senses, neutralize each other.

It will, no doubt, occur to the reader that this rod angularity will be much more than in the ordinary machine, owing to the necessary distance between the shafts; but, on the other hand, there is no side thrust on the piston, which may compensate for it. It seems probable, however, that another possible drawback—the backlash of the gears, owing to the reversing with every impulse of the forces transmitted by them—may be more or less of a nuisance. Practice, however, will be the best test of this.

The makers of this engine, the Rotary Motor Vehicle Company, of Boston (the name having no reference to the motor in question) place it at the front of a vehicle such as shown in the photograph, having a two-chain drive, wheel steering gear, etc. The speed-changing gear is located beside the engine, whose general arrangement is shown in one of the photographs. A long



ARRANGEMENT OF ENGINE IN CAR.

wood screw is balanced on the cylinder head, and the makers state that the photo is from a 6-seconds exposure with the motor running from 1,100 to 1,200 r. p. m. and the clutches out.

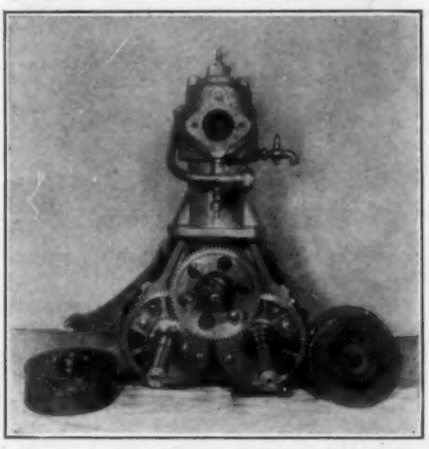
Improvements in Oil Burners.

Practically all makers of steam cars have experimented more or less with burners designed for the use of kerosene or heavy oil to take the place of gasoline, but all so far heard from report trouble from carbonization of the oil, resulting in the depositing of a hard crust on the vaporizing tube, and most of them also seem to find difficulty in avoiding black smoke and soot formation when the fire is started. In a lecture recently delivered before the Society of Arts in London, Arthur Kitson related how he had overcome these troubles in lamps of the oil-incandescent variety—which is getting very popular in Europe, though little is heard of them here—and by means that would apply to motor vehicle burners as well.

When oil passes between two surfaces, one of which is not of sufficiently high temperature for effecting its vaporization, carbon is deposited on the cooler surface. Of this well-established fact Mr. Kitson made use to get rid of the carbonizing difficulty in a simple manner. Along the middle of the vaporizing tube he inserted a rod which, owing to its position, remained cooler than the outside of the tube, and he found that nearly all the carbon was deposited on this rod. Hereby the five apertures were kept clear, and by withdrawing the rod, once every month or two, all the accumulated carbon was readily removed from it, whereafter it was reinserted. Another device mentioned by Mr. Kitson was designed to prevent oil from being turned into the vaporizing tube before the latter is sufficiently hot to vaporize it—the usual cause of smoke. It consists in a thermostatic valve, in connection with the vaporizing tube, which keeps the oil supply shut off until the valve rod has been heated to a point when the oil will be vaporized with certainty, and then automatically opens—the plan being similar in operation to the valves used for regulating water feed by the expansion and contraction of a rod according to its temperature.

Mouth Full of Balloon.

"Keep your mouth shut and your eyes open when riding at a mile-a-minute clip," said Alexander Winton, when asked recently if considerable difficulty was not experienced in breathing when going at extreme speed. "So long as you breathe through your nose it is all right, but never try to open your mouth. If you do you are liable to have a hard time getting it shut. I never opened mine but once when going fast, and then I came pretty near exploding. I was tearing along at about a mile a minute, when for some reason I tried



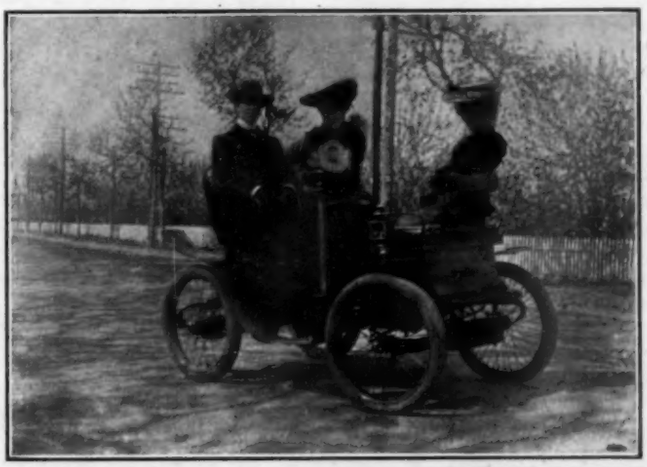
BALANCED ENGINE WITH CRANK CASE REMOVED.

to take a breath through my parted lips. Well, sir, my cheeks puffed out like a toy balloon in a fraction of a second. The air had rushed in like a tornado. I thought that I would strangle before I finally got my mouth closed again. It was the oddest sensation I ever experienced, and I do not know just how to describe it."

Oakland, Cal., as an Automobile City.

Oakland, California, is sometimes referred to by those who wish to be lovingly familiar, as the "Athens of the Pacific."

From the viewpoint of the artist and travelling observer, it is a beautiful city of gentle slopes, well peopled by dwellers in handsome homes, flanked by picturesque hills and holding within its borders and near the center one of the most beautiful of lakes and surroundings in the world, and on one side the bay of San Francisco, subject to all the varying moods of a sheet of land-locked water ten miles wide by fifty long.

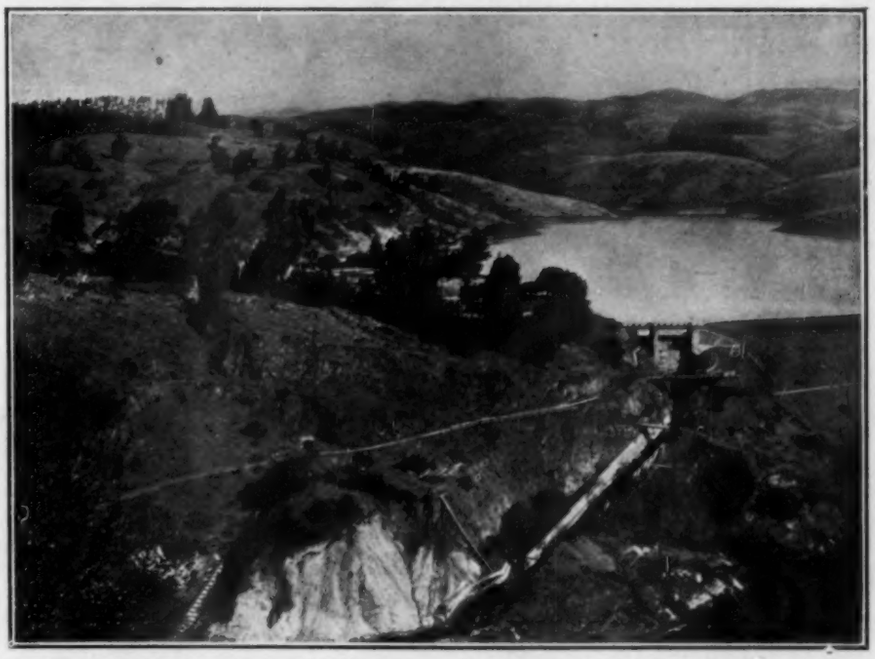


MOTORETTE PARTY ON ONE OF OAKLAND'S GOOD STREETS.

From the viewpoint of the practical automobilist, Oakland is a city of fairly good roads, some fine ones, some steep ones, and several leading in different directions to comparatively level journeys of thirty to 100 miles in length to adjacent localities Except for an antiquated and forgotten ordinance, passed in the early days of the first arrivals of the strange, new conveyance, it has had no severe restrictions from law makers in the enjoyment of the "machine;" —but it is bounded on the north by a county called Contra Costa, where, for awhile, there was serious talk of excluding entirely the "pestiferous autoists" from the "ke-ounty" roads; but a compromise was finally arranged, a little less stringent than shooting on the spot. To be sure, the county, in the main, is but sparsely settled by "old inhabitants," with little or no railroad encroachments, and consequently, a little behind the times; but the roads are mostly hilly and narrow, and the horses little accustomed to the progress of civilization.

BEAUTIFUL SURROUNDINGS.

On the east Oakland is bounded by the great San Joaquin valley, with its seemingly unlimited expanse and spots of hub-deep sand; on the south, by one of the garden spots of the State, the beautiful Santa Clara valley, holding its wealth of orchards and fine roads; and on the west, over the intervening bay, by the big city of San Francisco, with its cobbled streets; and a little to the north of west, the county of Marin, lately made famous in the courts by its diversity of taste for sports,—exhibited by harboring the pool sellers and gamblers driven away from its big neighbor, San Francisco, and then attempting to exclude from its roads anything in the shape of a self-propelled vehicle by vexatious arrests, individual persecution, and the passage of most narrow and stringent laws, which led to legal contests by automobilists that are now in process of being threshed out in the courts.



LAKE CHABOT, NEAR OAKLAND, CAL., SHOWING NATURE OF THE COUNTRY.

THE CLIMATE SUPERB.

Oakland and vicinity, (including the real "Athens"—Berkeley, the home of our State University), contains a population of more than 150,000, and about sixty autos of all kinds, and the Alameda County Automobile Club, with its thirty-two members. The disparagement between population and the number of machines is at once apparent, and suggests to one familiar with its perfect climate and beautiful drives, that it is a most promising field for missionary work by the enterprising and sleepless manufacturer. A partial explanation may, perhaps, be found in the fact that it bears a similar relation to San Francisco that Brooklyn does to New York; and that it has been little advertised, and has few tourist lingerers. The climate is little short of perfect for motoring, there being a good average of at least 300 smiling days in each year; days on which it is not too stormy, cold or hot, to enjoy a ride. If this kind of a climate, with fairly good roads and a generous population as regards speed allowance, does not come near to making automobile heaven, nothing does. And yet, sixty autos to 150,000 population! thirty miles from Niagara for a life time, and never a sight of the falls! Human nature is peculiar.

STEAMERS PREDOMINATE.

The majority of the automobiles used here were purchased at the time of first development and are mostly "steamers." These are being gradually but surely replaced, one by one, with gasoline cars, big and little, and there is encouragement for the future.

Several prominent physicians are using steam autos in their professional work, and hold that one machine does the work of two or three horses. A gasoline car is used in the daily course of business by a banker, and another by an architect and builder; both giving great satisfaction, the architect having run his little Oldsmobile more than

12,000 miles with a surprisingly small bill for repairs. A steam runabout is being used daily by a contractor and real estate agent. Two big Wintons, a beautiful Autocar, several Knox machines, and a few Olds are to be seen from time to time on the road for pleasure. A batch of De Dions, landed here and duly distributed may be heard at intervals, daytime and nighttime; and despite their noise, they are always ready to go, and are really doing good work.

In the contiguous town of Alameda, there is the Island City Automobile Club, a little band of a dozen enthusiasts who make weekly runs with their gasoline cars, and picnic in the numerous beautiful spots to be found in a half day's run from home.

A FEW ECCENTRIC STUNTS.

The Oaklander is a conservative citizen, and there have been few serious accidents. A rich Klondiker invested some of his surplus of gold and strenuosity in a steam auto, and after about the second trip out men went with baskets and boxes and picked up the pieces and brought them back to the repair man, whose bill must have been of a size to purchase about one and one-half machines. However, the thankful Klondiker was well satisfied, as neither he nor his family, who were aboard, were seriously hurt, and he had the thing in fairly good condition for a souvenir. The last heard of him, he had gone back to Alaska to recuperate.

Another steamer had quite a run of bad luck. Its owner, a prominent citizen, was showing a few admiring friends who were standing around, how the throttle lever worked. He was standing alongside the empty machine. In about six seconds it had made a beautiful run to a high stone wall a couple of blocks away at the end of the street, and it took three weeks to put it together again. Not long afterward it tried to run over a small dog, and skated along on its right side far enough to skin off the water glass and everything that stuck out, and laid there and fumed until all the steam had run down. Nobody hurt! The next dog it tackled, it stood on its head against a lamp post. Nobody hurt but the dog! But after a couple of other bad tricks it quit, and has quite reformed.

Oakland's automobile club has fallen in line with the best clubs in other places and will discourage and discipline violators of the rules for careful and conservative driving; thereby making it quite a factor in the work of allaying prejudice against the sport.

Recently the auto was put to quite a novel work here. A well known real estate broker was to be married in the evening, and engaged a steam machine to unexpectedly charge up at a signal and bear the bride and groom away from the annoying chasers in hacks and carriages. The programme was carried out to the letter, and the auto did its work nobly, leaving the antiquated horse-drawn vehicles that attempted to follow far in the rear. After zigzagging around a few blocks, the swift running and noiseless little dos-a-dos was seen no more that night by the friends whose intentions are good, but whose actions are annoying at the end of weddings.

ONE OF MANY PICNIC SPOTS, NEAR OAKLAND, CAL.

Fearless Women Motorists of Detroit.

More than a score of prominent ladies of Detroit have become adepts in the operation of automobiles, and some of them may be seen almost any pleasant day on Jefferson Avenue and other well-paved streets of the City of Straits. They are not alone expert in driving the clean and simple electric runabouts, victorias and phaetons, but a number of women drive anywhere about the city on the busiest streets and crossings with gasoline runabouts, while several operate powerful tonneau touring cars at considerable speed with perfect confidence.

Mrs. Russell A. Alger, Jr., frequently drives the big Panhard which the General's son brought home from Europe last year, not only negotiating the well-paved streets of the city, but driving over the country roads to Windsor and Kingsville, across the St. Clair River in Canada, at twenty-five miles an hour. Mrs. Alger's first experience was with a Winton touring car, and when she returns from California, where she now is, she will doubtless drive the new Packard which her husband has bought.

Miss Christine Russell owns and operates an Olds, and other Detroit products of the same make are driven by Mesdames F. L. Smith, Theodore Backus, B. Burton, Murback and Jenks.

Winton touring cars are operated fearlessly by Mrs. Charles Warren and Miss Geer, through the crowded streets and over the fine roads of Belle Isle.

Miss Corinne Palms and Mrs. Strathearn Hendrie are noted locally for their expertness with the electric automobile. The former is the only Detroit woman who has driven an automobile in a race, having accepted a bantering challenge from John W. Dyar to race her electric against his running horse. The contest took place on a circular driveway in front of the Country Club house at Grosse Point, and the outcome remained in doubt during several laps until in the last lap the steering knuckles of the automobile gave out and left the victory to the horseman, though the plaudits of the spectators were for the motorist as she was assisted from the machine. Mrs. Hendrie's fame is due to the unprecedented celerity with which she learned to operate her electric, having refused to let the instructor touch the steering lever and controller from the moment she first mounted into the runabout, and from that day running the machine unassisted and unaccompanied through the most crowded thoroughfares. Perhaps the secret of her confidence is that she was an accomplished horsewoman.

One of the youngest feminine automobilists of Detroit is Miss Mary Moore, who runs her electric with absolute fearlessness at top speed through crowded thoroughfares with never an accident.

Mrs. S. T. Douglas drives a Columbia electric, and Mrs. Henry B. Joy a little Baker electric runabout. Mrs. Philip H. and Mrs. William C. McMillan operate Waverleys. Among the other women enthusiasts are Mrs. David Whitney, Mrs. W. T. McGraw, Mrs. T. H. Simpson, Miss Ford and Miss White.

Seems to Have Arrived Already.

"The automobile has yet to find its place in fiction," she remarked.

"Well, I don't know?" he returned, interrogatively.

"For instance?"

"There's Knoblocks—arrested for running his machine thirty miles an hour; was dismissed because he swore it was going only ten; yesterday he stuck it out with me that he was making sixty miles at the time, while the maker of the thing says it couldn't make forty-five miles to save a man's neck!"

Correspondence

Paris-Madrid Comment.

Editor THE AUTOMOBILE:

SIR: Certainly of all voyages which I have made in automobiles, there remain remembrances, but the Paris-Madrid has this in particular, that it gives me no desire

PARIS-MADRID TOURIST SECTION.
In Spain Headed for Madrid.

whatever to again return to the country seen in passing. Poor Spain! sad country, inhabited but more often wild, where tombstones are more often encountered than people, for the three last stoppages, Burgos, Valladolid, 118 kilometers, Vallodolid-Salamanca, 113 kilometers, Salamanca-Madrid, 207 kilometers, have been passed through wild countries, in which we have very rarely seen any inhabitants. Some denizens of the neighboring places have visited us, the women in riding costumes, the men in hunting costumes, and they wished us good-day, (saluted us) by clapping their hands together. Flowers! None. They cannot grow in these sad solitudes. Even the fever must reign here, for I have seen many of the people with handkerchiefs over their mouths, and between Valladolid and Salamanca, everyone, men, women, and children

PARIS-MADRID TOURIST SECTION.
A Halt for Tire Repairs.

have the head covered with a woolen cloth.

The route has not been so difficult as the one from Paris to Vienna, but quite as pleasant as the one from Paris to Berlin. With the exception of the descent of Massiac in France, the climbing of the Guadarama in Spain, has not given us any dangerous spills. We have had some difficult turns to make, but the route has been well lined with men who have pointed out the dangerous places, or even simply the difficult ones.

I send you a photograph of the Ader motor car, No. 20, in which with my oldest daughter I have made the trip to Madrid. Motors must be very well made to be capable of standing the bad oils of so poor a quality as are furnished here to consumers. During the last days we were covered terribly with dirt, the result of the heavy dust, but our good Ader motor has taken us safely from Paris to Madrid, as during last year it took us from Paris to Vienna.

JULIETTE LOCKERT.

San Sebastian.

Small Car Gives Pleasure.

Editor THE AUTOMOBILE:

SIR:—I am sending you herewith a picture of my third automobile, whch I use for pleasure only. My previous machines were steam cars, but I find the real good gasoline motor the most practical. I have devoted considerable time to the study of the machinery and find that the knowledge so acquired brings the cost of repairing and running the machine down to a minimum. It is absolutely necessary for an automobilist either to master the machinery himself or to have a chauffeur in his employ who thoroughly understands it. If this were more appreciated there would be less discouragement among automobilists. Although my auto and its horse-power are small I have covered considerable distances with it in good time. I have taken one trip to Lakewood, N. J., and frequent trips to nearby Long Island resorts.

A. STEIN.

New York City.

Cutting Out the Muffler.

Editor THE AUTOMOBILE:

SIR:—As a reader of your interesting paper and also an enthusiastic motor cyclist, I read in your issue of May 23 the article regarding "cutting out the muffler." The suggestion made that the hole in the exhaust pipe did more harm than good, I think erroneous. Any one who has a motor cycle, or for that matter any mechanically propelled vehicle, usually tries his best to get all the speed out of it of which it is capable. Whoever thinks the hole in the exhaust pipe does not let the gases out quicker, and relieves the back pressure some, might try the experiment and hold his hand in front of the hole, and see how much gas does come out, or he might try it at night, and he would see the blue flame, showing that it actually does come out. Personally, I find the hole —with the sleeve over it for law-abiding purposes—helps the speed of the machine, and the motor cycle "fan" who tried to climb his pet hill had some other trouble bothering him. Upon second thought, do you not think I am correct in this matter?

R. N. DANA.

Pawtucket, R. I.

As we view the mattter the effect of a hole in the side of the exhaust pipe will depend on the conditions of the particular case. If the hole is near the valve chamber, or if the muffler is unusually obstructive, a portion of the gases will necessarily pass out through the hole. The same would often be true with a moderately obstructive muffler and a hole close to it, as the gases momentarily checked or dammed up at the muffler, would seek another exit.

PARIS-MADRID TOURIST SECTION.
Mme. Lockert Lunches by the Wayside.

But with a muffler creating little or no back pressure, and a hole somewhere near or past the middle of the exhaust pipe, the conditions may be different. The gases expand on their passage through the pipe, and what they lose in pressure, they gain in velocity. Hence it would almost certainly happen, especially with the hole located in a smooth straight section of pipe, that the rushing stream of gas inside might have too little pressure and too much momentum to take an abrupt right angled course on reaching the hole; and we see no difficulty in supposing that under certain conditions, it might even draw air in at that point. It would almost certainly,

"A PICTURE OF MY THIRD AUTOMOBILE."

do so if the muffler were removed. The blue flame mentioned by our correspondent suggests that the hole in his exhaust pipe may be located near the valve chamber (which is, of course, the best place for it) or that an imperfect mixture or late spark may cause unduly prolonged combustion and consequently an abnormally high pressure at the moment of exhaust.—ED.

Another Royal Motorist.

Editor THE AUTOMOBILE:

Sir—You will be interested to know that Queen Elena of Italy shares with King Victor Emmanuel III., who is an enthusiastic automobilist, his interest in this most modern of sports. They are seen frequently in an automobile passing through the streets of Rome or speeding along the picturesque highways of the Roman Campagna. The royal automobile is always accompanied by a squad of bicyclists, two of whom ride at the left, beside the King, and one at the right, beside the chauffeur, while others follow closely. The bicycle guards are dressed in simple black uniform; they carry revolvers on the handle-bars of their wheels and act as an escort to the King when he drives or goes in automobile *in forma privata.*

There are seven or eight automobiles in the royal establishment. The newest, recently constructed at Turin, at His Majesty's command, has a speed of 85 kilometres an hour, and cost 2,200 francs.

Rome, Italy. M. G. FOSTER.

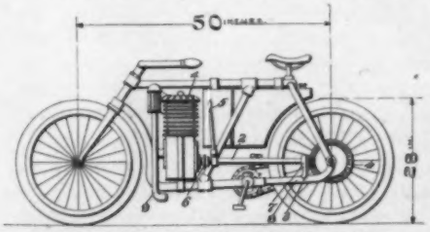
Bevel-Gear Drive Motor Cycle.

Editor THE AUTOMOBILE:

SIR:—In the accompanying drawing I have shown the latest thing in motor-cycles. I have worked out this design because of an urgent need for motor cycles driven otherwise than by a belt or chain, as the belt has the very grave defect of stretching and slipping after an hour's run, and especially so if it happens to get wet or very dry. Furthermore, a belt in order to work properly on a motor cycle must be supplied at short intervals with oil, to keep it soft and moist; otherwise it will not cling to the pulleys. Strange as it may seem, sand and grit thrown upon a leather belt will invariably cause it to slip upon the iron pulleys of a motor cycle.

The objection to the chain has been its liability to breakage caused by the sudden "jerks" of the motor, especially in starting; and a further objection has been the high speed at which the chain must travel when the motor is making, say, 2,500 revolutions per minute, which is frequently attained by it.

The bevel gear drive for motor cycles first entered my mind upon inspecting a drive of this kind upon a well known touring car made in Cleveland.



BEVEL-GEAR DRIVE MOTOR CYCLE.
1. Motor. 2. Drive shaft. 3 Bevel pinion. 4. Bevel gear. 5. Hand lever. 6. Friction clutch. 7. Bearing bracket. 8. Rear fork. 9. Exhaust pipe.

My motor cycle is not patented and will not and cannot be patented, as there is nothing patentable in placing a well-known bevel gear drive upon a motor cycle instead of on an automobile, where the same has been used for many years. In addition to this, the writer's profession of patent attorney debars him both morally and legally from obtaining patents. The design is, therefore, public property and may be adopted by anyone who desires to do so.

I predict for it a successful career.

The main dimensions are as follows: Wheel-base, 50 inches; diameter of wheels, 28 inches; weight complete, 110 pounds.

The motor 1 has its shaft extending parallel with the frame, although mounted in the usual location, and a short shaft 2 extends rearwardly from the motor and has a bevel pinion 3 mounted upon its rear end, and this pinion meshes with a large bevel gear 4 secured to the hub of the rear wheel. The motor is normally disconnected from the driving shaft 2, but may be readily connected by the hand lever 5 which controls a common friction clutch 6.

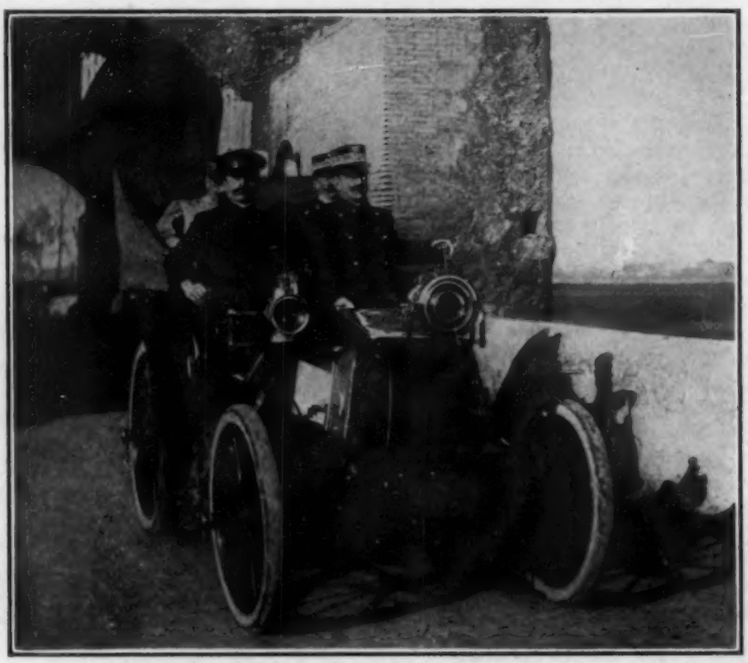
The rear end of the driving shaft is supported in a bearing bracket 7 extending upwardly from the horizontal rear fork 8. The forward end of the said shaft needs no bearing other than that supplied by the motor casing.

The motor is of the enclosed fly-wheel type, and may be purchased from any of the various manufacturers, and mounted upon the frame by an ordinary machinist.

The number of cylinders may be readily increased from one to four, or even eight, by placing them all tandem, and this can be done by simply elongating the frame. In this way a racing motor cycle of high power can be built, and I contemplate building one in the near future of 40 horse power.

The exhaust pipe is indicated by the numeral 9, and in this connection I desire to explain why the exhaust is turned toward the rear. I have found in both automobile and motor cycle practice that by discharging the exhaust rearwardly, I thereby make use of the principle of the reaction turbine, and cause the exhaust to assist in propelling the vehicle. It has been demonstrated in numerous instances that a motor cycle will ascend a certain hill with the exhaust turned rearwardly, but will not ascend the same hill when the exhaust is discharged in an opposite direction, or laterally. JOHN C. HIGDON, M. E.

St. Louis, June 8.



KING EMANUEL III. OF ITALY IN ONE OF HIS AUTOMOBILES.
Sitting at left of the operator.

Mud Fenders to Swing with Wheels.

Special Correspondence.

BOSTON, June 15.—Several manufacturers of automobiles in Massachusetts and elsewhere will, it is stated, soon be marketing vehicles equipped with a new type of mud fender invented by Charles W. Brown, of the composition department of one of the Boston newspapers. The feature of the invention which the inventor claims has been adopted by the manufacturers is that it is mounted on the steering knuckle or hub in such a way that it swings with the wheel, always remaining in the same position relative to the wheel; that is, directly above and behind it.

Mr. Brown's patent also covers a method of suspending a curtain or splasher from the fender in such a way as to cover the wheel almost as far down as the hub. By a simple arrangement of levers, the curtain and frame can be raised when driving through water or deep ruts.

NEW VEHICLES

New Car from New England.

The Phelps Motor Co., of Stoneham, Mass., whose sales department is at 122 Massachusetts Ave., Boston, is building a new gasoline car that possesses many novel features.

PHELPS 15-HORSEPOWER TONNEAU, WITH VERTICAL MOTOR.

A three cylinder vertical motor is of very compact design and mounted in front beneath a low sloping bonnet. The motor supporting frame rests on double elliptical springs fore and aft. The cylinders, which are cast integral, are 4½ inches by 4½ inches. The primary ignition is employed, the current being supplied by a battery. Lubrication is on the splash principle. At a normal engine speed of 900 revolutions, it is claimed that 15 horse power is developed. The speed is controlled by a throttling governor.

A special flanged radiator, formed of a continuous tube of eight turns, hangs low in front while additional radiating surface is provided under the floor of the car. A gear driven centrifugal pump completes the circulating system. The water tank holds 12 gallons. In addition to the usual cooling system cold air is forced against the cylinder walls by means of fan-shaped fly-wheel spokes, the fly-wheel being mounted on the front end of the engine shaft.

The frame construction of the Phelps car at once attracts attention, owing to its novel design. No reaches are used, the correct relation between the front and rear axles being maintained by means of a large tube which is securely attached or screwed to the motor casing in front and to the rigid transmission case at the rear. Through this large tube extends the longitudinal driving shaft which transmits the through the medium of bevel gears in the usual manner. The transmission gearing, which is entirely enclosed in a dustproof casing, permits two forward speeds and reverse. The general arrangement of the running gear can be readily understood by referring to the small engraving. As will be seen, the body of the car is pivoted at the rear, and as the various connections between the running gear and body are flexible, the entire body may be lifted from its front end, hinging on the rear axle, sufficiently to expose the mechanism.

Additional special features to which the manufacturers call attention include two-point lubrication, a pivoted steering post, a large and efficient muffler, increased accessibility, freedom from vibration, unusually large radiating surface, etc.

PHELPS CAR, WITH BODY RAISED.

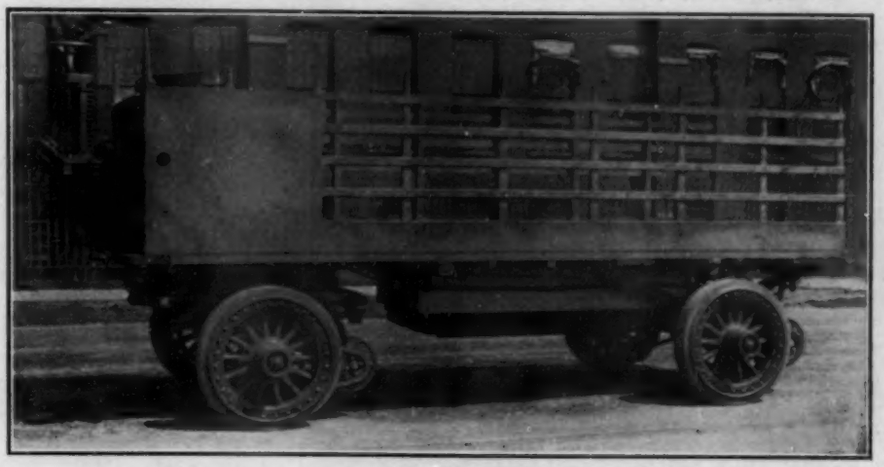
The car weighs 1,400 pounds. The wheel base is 78 inches and the tread is power of the motor to the rear wheels 54 inches.

Four-Wheel Drive Electric Truck.

A new electric truck that possesses a number of very interesting features has recently left the works of the Electric Vehicle Co., in Hartford, Conn.

The general structural lines follow quite closely the well known "New York gear" type. All four wheels, of the Sarven type, are mounted on very heavy roller bearings and four powerful motors are used for driving, one for each wheel. These are suspended directly from the body of the vehicle, transmitting power to the wheels by heavy roller chains. The wheel sprockets are bolted directly to the spokes, giving a simple but strong construction. Chain adjustment is provided by a powerful strut between the axle and the motor. This is so made as to allow for working and twisting of the body without any twist being imparted to the strut.

The front truck is steered by means of an electric motor. A large, broad faced steering sector carried by the truck, meshes with a large pinion at the lower end of a short, thick vertical shaft, at the upper end of which is a worm gear driven by a worm on a short shaft, which can be clutched to the steering motor or not as desired. This arrangement affords a rigid back lock holding the wheels securely wherever the motor leaves them. In order to give perfect steadiness of steering especially when coasting or when little power is required, a solenoid released brake is put on the armature shaft to stop its rotating instantly the power is turned off. When the front truck is swung at right angles to the body it automatically cuts the power from the rear wheel motors, this arrangement preventing the front tires from being shoved sidewise when the vehicle is turned in a short circle. The steering motor is controlled by a short tiller placed immediately above the main controller. It is so adjusted that if it is swung through, say, 15 degrees,



FOUR-WHEEL DRIVE COLUMBIA ELECTRIC TRUCK, WITH ELECTRIC CONTROL.

the front truck swings through the same angle and then comes to rest. The direction of the tiller is always indicative of the direction of progress of the vehicle. Means are provided to steer the truck by hand in case of accident to the motor or battery.

The truck is provided with a powerful winch, operated by the steering motor when it has been unclutched from the steering gear and coupled to the clutch gear. This change can be quickly made by the operator.

The battery consists of 44-exide cells of 280 ampere hours capacity arranged in a tray hung below the body by the usual Columbia method. A new method of battery suspension from three points has been introduced in this vehicle, by means of which all warping and twisting of the battery is eliminated. The usual Columbia automatic contacts are used on the tray, simplifying the work of loading and unloading batteries.

The controller is of the standard Columbia vertical pattern, giving four speeds forward, an electric brake and three reverse speeds. The electric brake works on all four wheels and thus prevents skidding.

A powerful foot-operated expanding brake works directly on the rear wheel sprockets. This is a wood-faced brake arranged for easy adjustment. Large, solid tires are used, and as power is applied equally to all four wheels, the driving strain per tire is greatly reduced.

This truck is especially designed for heavy traffic in crowded centers. It can be swung entirely around in its own length in from five to ten seconds. The matter of accessibility has been carefully attended to and all working parts, including motor commutators and bearings, can quickly be gotten at for cleaning and oiling, adjustment and repairs.

The Electric Vehicle Company has completed two of these vehicles.

New Style Electric Victoria.

The flexibility in carriage styles for electric vehicles is illustrated in the accompanying reproduction of a photograph of a new carriage built for Howard Gould, of New York, by the Electric Vehicle Co., of Hartford. This is styled an underslung Victoria, possessing the characteristics of this carriage type with the addition of a rear perch for the driver. The body is suspended on double elliptical springs attached to the front and rear axles and the drive is connected with the rear wheels, steering being effected by the usual attachments to the front wheels. The vehicle has good easy lines, with large curved dash and folding hood. The batteries are carried in the oblong box, under the body and between the axles. It has a "swagger" appearance and others of the type have already been ordered by wealthy New Yorkers.

Preparations are being made at Bucyrus, O., to have an automobile speed contest at the coming county fair. Only local machines will be permitted to enter.

MASSACHUSETTS ROAD INSPECTION BY STEAM WAGONETTE.

Special Correspondence.

BOSTON, June 13.—Members of the Massachusetts Highway Commission made an inspection of a stretch of State road recently in an automobile. Instead of using a steam surrey, as they have done on several previous trips, they tried a Mobile wagonette weighing about 3,000 pounds, including the canopy top. It was driven by a large Mason engine rated at about 15 horse power, and carried sixteen gallons of gasoline in two tanks, and about sixty gallons of water. The machine was planned for carrying ten people in and near cities, but it made a fair showing on nearly eighty miles of country road which the commissioners traversed before they arrived back in Boston. A clogging of the burner developed during the first half of the run which prevented the machine from making steam fast enough to meet the requirements of the severe grades encountered, but in most cases it took the hills easily and swiftly, carrying the three commissioners and their secretary—all heavy men—with THE AUTOMOBILE correspondent and the operator. The stops owing to slow steaming footed up about two hours out of a day's run lasting from about 9.20 A. M., when the machine left Newspaper Row, Boston, until about 11 P. M., when it returned.

The commissioners like the automobile because it makes them independent of rail transportation, and allows them to inspect many miles of road in a day, and at the same time to stop for conferences with local boards regarding new roads, repairs, or other matters. The route of trip was directly toward Providence through Westwood, Dedham, Norwood, Walpole, Norfolk, Wrentham, to Franklin, where a stop was made for dinner. Starting from Franklin late in the afternoon, the run homeward was through Medway, Holliston and South Framingham, where the party stopped for supper; thence to Boston by way of Natick, Wellesley, Newton and Brookline. About 360 gallons of water was used on the trip, and each eight-gallon gasoline tank was replenished once.

A curious electrical problem was furnished by the action of the steam air pump. When this pump was in operation and the carriage standing motionless, it was found that a person standing on the ground and touching one of the metal supports of the canopy or any other metal part of the carriage trimmings, at once received an electric shock. The only explanation offered was that, since the carriage was insulated from the ground, the frictional electricity which it was evident that the pump mechanism developed, could not pass into the ground through the wheels and therefore used the medium of the human body whenever a connection was established.

HOWARD GOULD'S ELECTRIC VICTORIA WITH UNDERSLUNG BATTERY.

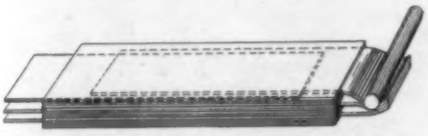
Toledo newspapers estimate that at least $250,000 is invested in automobiles in that city.

Patents

Spark Coil Condenser.

No. 728,780.—C. F. Splitdorf, of New York.

A condenser in the form of a cylindrical roll, in which a metal rod performs the functions of a core and of one of the terminals, as the positive. The leaves of alternate paper and tinfoil are rolled around the core, and a bare wire wrapped around



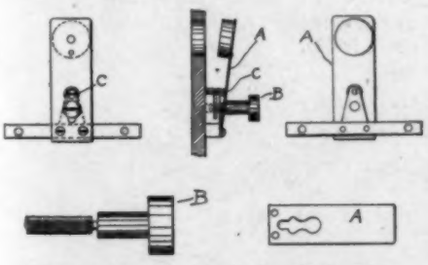
SPLITDORF SPARK COIL CONDENSER.

the outside connects all the negative leaves of foil and serves as the negative terminal. The cut shows how the positive and negative leaves project beyond the paper strips, at alternate ends, before the coil is rolled up.

Spark Coil Vibrator.

No. 728,632.—C. F. Splitdorf, of New York.

This is a vibrator whose armature spring *A* is made adjustable as to tension by means of the screw *B*. The narrow neck of this screw engages a slot in the spring, and by turning the screw the spring may be made to approach or recede from the



SPLITDORF SPARK COIL VIBRATOR.

magnetic core as required for the most efficient working. When properly adjusted, the screw is clamped by screw *C*, which acts on a slotted portion to clamp the threads of *B*. The contact screw is not shown. The right-hand figure shows an inverted view of the vibrator and block supporting it.

Running Gear and Air Pump.

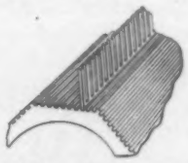
No. 729,737.—P. J. Collins of Scranton, Pa.

An affair comprising a triangular underframe with the front axle swiveled vertically at its apex. Radius rods extend from the ends of the front axle back to the side members of the frame, where they terminate in small plunger air pumps, by which the fore and aft oscillations of the front axle may be utilized to pump air into the fuel tank or elsewhere.

Air Cooled Motor.

No. 728,724.—J. H. Jones, of Springfield, Mass.

A substitute for the threaded pins of the Knox engine. Longitudinal grooves are



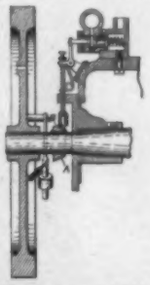
JONES CYLINDER FINS.

milled in the cylinder wall and thin metal combs wedged into the grooves as shown.

Gas Engine Governor.

No. 728,748.—H. M. McCall, of Pittsburg.

A suitable connection from the flywheel weight shifts the cone *A* along the shaft, by which roller *B* and suitable connections



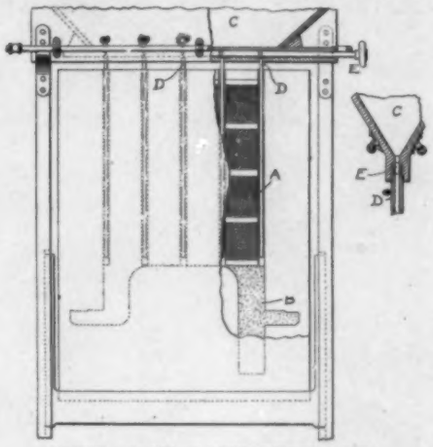
McCALL GOVERNOR.

are made to operate on the air and gas valves.

Storage Battery Plates.

No. 728,189.—J. Bijur, of New York.

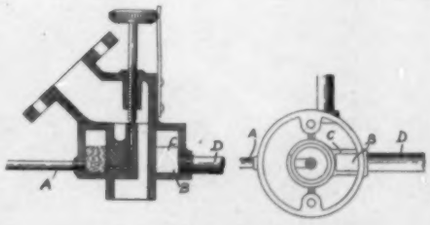
This invention is based on the inventor's discovery that a lead frame can be cast around thin sheet lead or lead ribbon without melting the latter, if the melted lead is poured in such a way that it does not flow, but instead comes to rest as soon as it touches the solid lead. The process thus made possible is an improvement over that



BIJUR CAST BATTERY FRAME.

of "burning" the lead ribbon to a frame previously cast.

In the figure is shown the preferred method of procedure. *A* represents the lead leaves, held in place in a suitable mold and joined if desired by burning their ends, and *B* indicates the lugs of the frame. *C* is a trough of melted lead, heated by gas jets, along its sides; and *DD* are iron tubes by which lead is conducted down to the bottom of the mold. The lead is admitted to these tubes by a multiple valve *E*. As it is necessary for the best results that tubes *D* should be hot when the lead passes through them to the leaves *A*, they



WHITE FUEL ATOMIZER.

are heated by running lead through them to the lugs *B*. When the lead rises to the bottom of tubes *D*, the mold is lowered progressively as fast as the lead enters, so that there is little or no flowing after it leaves the tubes.

For the best results, the leaves and mold should be hot, and the leaves must be free from oxide.

Fuel Atomizer.

No. 729,467.—J. C. White, of Decatur, Ill.

An apparatus designed to be bolted directly to the valve chamber. The second

MEYERS STEERING WHEEL.

figure is a plan view with the flanged elbow casting and needle valve removed, from which it will be seen that the gasoline, which enters by the pipe *A*, overflows into pocket *B* when it reaches the top of walls *C*, and returns by pipe *D* to the tank. Though the overflow feature is hardly the best means for automobiles of keeping a constant level, the device is worth studying for its simplicity.

Steering Wheel.

No. 729,079.—H. W. Meyers, of Fort Wayne, Ind.

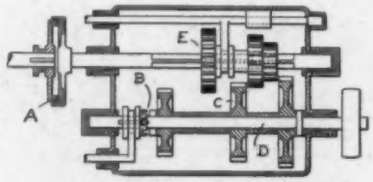
A wheel swiveled eccentrically to an arm at the top of the steering column, as shown in the cut. It is held in its normal

position by the pin *A*, whose lower end screws into the top of the steering column. By unscrewing this and lifting the pin against the pressure of the spring, the wheel is free to swing forward, giving the operator better access to his seat.

Change Speed Gear.

No. 729,875.—J. Latille of Levallois-Perret, France.

To reduce the shock of changing gears below that possible when the friction clutch *A* is disengaged, the inventor proposes to



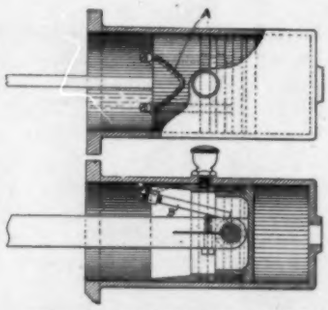
LATILLE CHANGE SPEED GEAR.

interpose a claw clutch *B* between gears *C* and shaft *D*, and release *B* at the moment of shifting. The effect is to divide the task of changing the speed of gears *E* between the gear teeth and the claw clutch.

Piston Pin Oiler.

No. 729,537.—H. H. Buffum of Abington, Mass.

An arrangement comprising a V-shaped groove *A* in the surface of the piston, in



BUFFUM PISTON PIN OILER.

which groove oil collects and runs down to the two extremities of the V, whence it passes into ducts *B B*, leading to the piston pin. The device is intended particularly for horizontal gas engines.

Control System for Steam Vehicles.

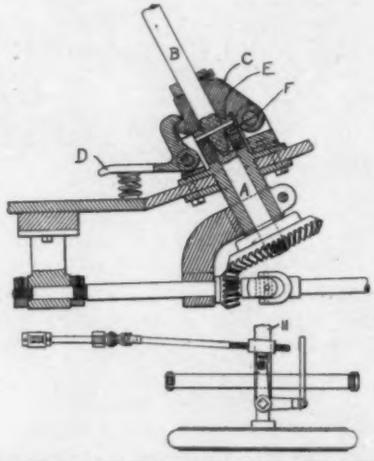
No. 729,776.—H. Lemp and O. F. Persson of Lynn, Mass.

This system comprises means for controlling the throttle and valve lead from the steering column. In the latter (Fig. 1), the outside tube *A* is stationary and serves only as a support. The inside tube *B* is connected above to the vertically swiveling steering handle *C* and below to the lever *D* (Fig. 2), both being perpendicular to the plane of the paper in Fig. 1. The middle tube *E* connects above to hand wheel *F* and below to pinion *G*, meshing with a segmental gear by which motion is communicated to rack and slide *H*. From *H* extend arms *I I*, acting on the valve gear, which may be of any preferred sort. Two three-cylinder single-acting engines *J J*, driving the rear wheels independently, are indicated in the drawings. A pawl *K*, pressed by a spring into notches in slide *H*, locates four positions for the latter, reverse, neutral, early cut-off, and late cut-off respectively. The central rod *L* (Fig. 1) connects the throttle lever *M* and an eccentric *N*, which operates the throttle *O* through rod *P*. *Q Q* are stay rods. From the main steam pipe *R* two branches *S S* supply the two engines. *T* indicates two hand valves for shutting off steam from one or the other engine in case of damage.

Tilting Steering Column.

No. 729,538.—H. H. Buffum of Abington, Mass.

A column comprising two parts *A* and *B*. *A* turns in a fixed bearing, and *B* turns in a bracket *C*, which may be tilted forward



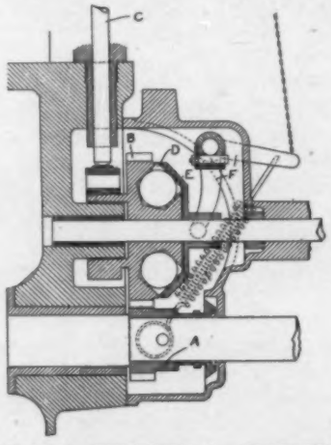
BUFFUM TILTING STEERING COLUMN.

when released by pressing pedal *D*. Part *A* is held by a flange *E*, from which project downward a set of claw teeth which engage corresponding teeth *F*, attached to part *B*. The lower drawing shows to a reduced scale how the motion is transmitted to the steering knuckles. The advantage claimed for this device is that it can be tilted regardless of the position of the ground wheels.

Centrifugal Governor.

No. 729,625.—E. Mathieu of Louvain, Belgium.

A is the pinion on the motor shaft, *B* the 2-1 gear on the cam shaft, *C* the exhaust



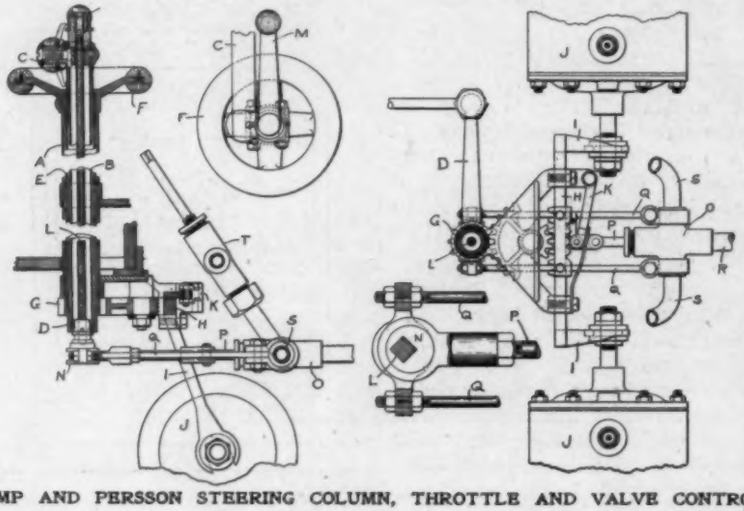
MATHIEU CENTRIFUGAL GOVERNOR.

valve push rod. *B* contains a number of pockets *D*, each containing a ball covered by the member *E*, which acts through bell crank *F* on the throttle valve. The effect of centrifugal force is to force the balls outward, pushing *E* to the right. Apparently the friction of the system would be reduced and its operation vastly improved by the substitution of a circular groove of the same cross-section for the separate pockets *D*, thus allowing the balls to roll freely.

Heating System.

No. 728,430.—W. O. Worth, of Chicago, and R. W. Donaldson, of Louisville, Ky.

An arrangement of valves and piping by which water from the engine jacket may be circulated wholly or in part through radiating coils in the body of the vehicle, or sent entirely through outside radiating coils in warm weather.



LEMP AND PERSSON STEERING COLUMN, THROTTLE AND VALVE CONTROL.

DAIMLER MERCEDES PLANT BURNED IN GERMANY.

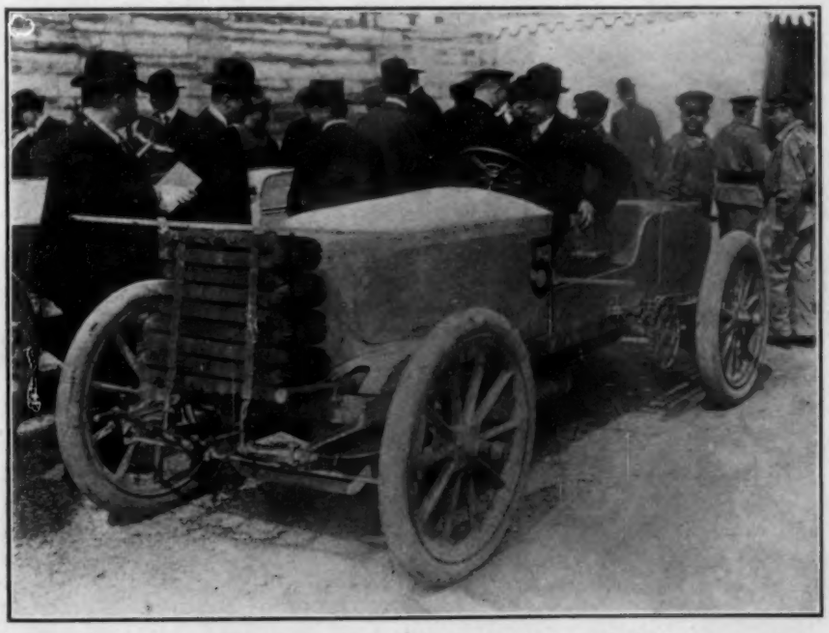
A destructive fire broke out in the automobile factory of the Daimler Motor Co. at Cannstadt, Germany, at 3 A. M. on June 11, and the whole works were soon in flames. All the carriages in the principal hall, numbering nearly seventy, were totally or partially destroyed, and among these were six 90-horsepower machines that were to be sent to Ireland for the cup races. Most of the motors were in another building, some distance away, undergoing trials, and were saved, as were also a number of complete vehicles that were being painted. The machinery, tools and designs were also saved.

Arrangements were quickly concluded to occupy a nearby locomotive factory, and work was almost immediately resumed.

It is thought that the total loss, which was fully covered by insurance, will amount to $500,000.

Owing to the destruction of the cup racers it has been decided to send three 60-horsepower cars for the Gordon Bennett, to be driven by Foxhall Keene, Baron de Caters and Herr Jenatzy.

The loss of the Cannstadt plant will be a serious blow to the American admirers of the Mercedes car, a number of whom have purchased high powered vehicles for this season's delivery. Among purchasers of cars of this type that were eventually to have found homes on this side of the Atlantic were Alfred, Reginald and W. K. Vanderbilt, Jr.; Edward A. Thomas, Henry Clay Pierce, Talbot J. Taylor, Bernard Baruch and E. Hawley. Roy and W. T. Rainey had also purchased Mercedes cars, but they



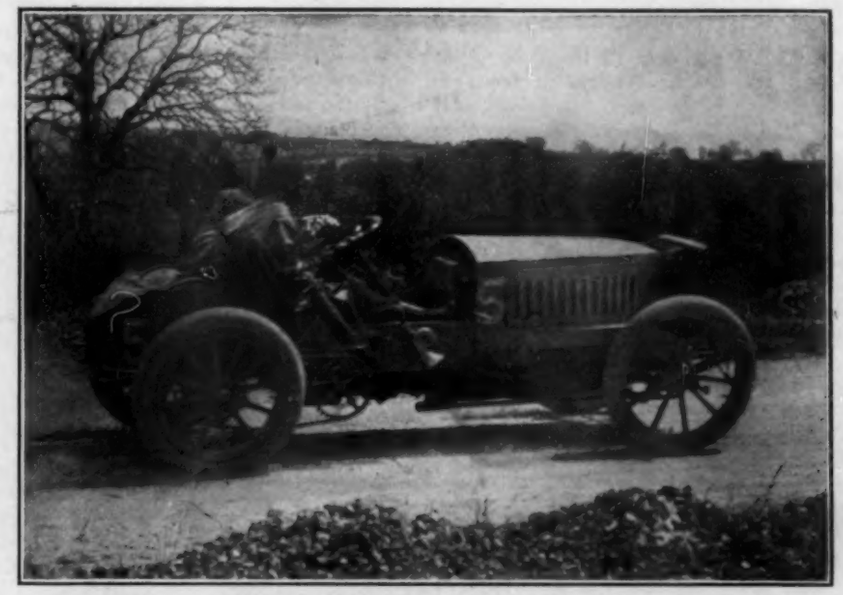
LORRAINE BARROW WEIGHING-IN FOR PARIS-MADRID RACE IN 45-H. P. DE DIETRICH CAR.

are assured that delivery will be made when promised, at the close of the season. Other American purchasers who fortunately secured their vehicles previous to the fire are George Arents, W. G. Graves, Paul Rainey and Foxhall Keene.

Although the Daimler company will do everything in its power to deliver cars ordered as soon as possible, it is feared that many purchasers will be obliged to wait three or four months before their cars can be rebuilt.

Herschmann Awarded a Medal.

The contest committee of the Automobile Club of America has decided to award a gold medal to the Herschmann steam truck that competed as No. 7 in the commercial vehicle trials of May 20 and 21, in accordance with the protest filed by Mr. Herschmann. No. 7 was the only vehicle entered in the special class designated as "miscellaneous," for vehicles carrying a load of less than 50 per cent. of the weight of the vehicle, and as it finished the course each day, it was entitled to first award for the class. The truck weighed 10,225 pounds and carried a load of 3,805 pounds.



LORRAINE BARROW ASCENDING PETIGNAC HILL AT HIGH SPEED.
80 Meters from Where He Met with the Fatal Accident

To Complete With Camels.

Information is received from Cairo, Egypt, to the effect that American travellers in that city will soon cross the Sahara desert in a four-mile-an-hour automobile, specially constructed for travelling over sandy wastes. The vehicle is said to accommodate forty passengers, and, while the speed seems absurdly slow, it is greater than that of camel transportation. Egyptians in charge of camel facilities openly oppose the introduction of the automobile. The English government is now using a Winter-Ellis machine for transporting troops in Soudan.

Lorraine Barrow Succumbs.

The death is announced in dispatches from Paris of Lorraine Barrow, who succumbed at Libourne, France, on June 13, to injuries received in the Paris-Madrid, after lingering in agony for twelve days. Barrow was injured at Arveyres where in endeavoring to avoid collision with a dog, he turned his machine aside and collided with a tree, the machine being badly smashed up and its occupants hurled out on the ground. In our issue of June 13, we published an illustration of the machine after the mishap.

The Berkshire Automobile Club has leased the Berkshire Agricultural Society's race track for a race meet to be held this month.

STAR ENTRIES FOR INDIANAPOLIS MEET ON JUNE 19 AND 20.

Special Correspondence.

INDIANAPOLIS, June 13—The postponed races which were to have been held on May 30 have been set for June 19 and 20. The management of the Indianapolis Automobile Racing Asscciation hopes to make this the greatest automobile meet ever seen in the West, much greater than was originally intended. The drivers who are positively signed, and whose machines are now in the city or in transit, will give this meet the largest number of star drivers that have ever been gotten together for any one race meet in the United States. Alexander Winton is the only American star who will not be present. Those who will participate are as follows:

Barney Oldfield, holder of the world's track records from one to five miles; Tom Cooper, of Detroit, with his "999" machine, which has been driven a straightaway mile in 52 seconds; Earl Kiser, of Dayton, who will drive the Olds Pirate II.; E. V. Dixon, of Cleveland, who will drive the General "Scow," an odd-looking machine, first used at Dayton on May 30; P. L. Thompson, of Lansing, Mich., who will drive Pirate I., the Olds 15-horsepower racer, that broke all world's records in the Ormond Beach tournament last Spring for machines of its class and weight; George Widely, of Indianapolis, with his new Premier 40-horsepower machine; Edgar Apperson, of Kokomo, with his Apperson racing car; Charles Somers, of Indianapolis, with his Winton racing machine, and Earl Fisher, of Indianapolis, with his Winton.

All events are open for esntries, and the management assures the public that in every event a speed of better than thirty miles an hour will be attained. As the meeting occurs during the week of the national encampment of Modern Woodmen, large crowds are expected.

New York Registration Blanks.

Application blanks for certificates of registration of automobiles with the Secretary of State under the provisions of the recently enacted New York automobile law, have been mailed by the Automobile Club of America to its members. There is one form to be filled out by the private owner of the machine and another for the operator. The blanks are accompanied by a circular letter calling attention to the fact that manufacturers and dealers are required to register only such cars as they operate for their own use. It is also pointed out that if the owner has registered his machine prior to the passage of the Doughty-Baily act on April 23, he should return to the Secretary of State at Albany the old certificate, so that it can be numbered as required. If the car is not registered the blank for "Statement of Owner" should be filled out and mailed to the Secretary of State together with the fee of $1. A separate blank must be filled out for each machine.

When the numbered certificate has been received, a corresponding number must be displayed on the back of each vehicle in Arabic numerals, black upon a white ground, in figures not less than three inches high and each stroke not less than half an inch wide.

If the initials "N. Y." are carried in a conspicuous manner in conjunction with the number, the machine will be exempt from registration in the State of Connecticut.

Every person desiring to operate an automobile as mechanic, employee or for hire is required to be registered also, and application should be made by filling out the "Statement for Automobile Operator" blank and sending to the Secretary of State, accompanied by $1 for registration fee. Whenever operating a vehicle the operator should carry his license certificate and be prepared to show it to a police officer whenever it is demanded.

The two blanks are as follows:

STATEMENT OF OWNER OF AUTOMOBILE FOR CERTIFICATE OF REGISTRATION.

To the Secretary of State,
Albany, N. Y.

Dear Sir: I hereby make application for a certificate of registration as owner of an automobile or motor vehicle, and pursuant to the provisions of Section 166 of the Highway Law, I make the following statement in which I have given my name and address, and also a brief description of the character of such vehicle, as follows, viz.:

Name, ...
Address, ...

DESCRIPTION OF AUTOMOBILE.

Trade Name, ...
Style, ...
Seating Capacity, ...
Motive Power, ...
Factory Number, ...
Made by, ...
Dated, ... 190.

..... Owner.

STATEMENT OF AUTOMOBILE OPERATOR FOR CERTIFICATE OF REGISTRATION.

To the Secretary of State,
Albany, N. Y.

Dear Sir: I hereby make application for a certificate of registration as an automobile operator, and pursuant to the provisions of Section 166 of the Highway Law I make the following statement in which I have given my name and address, and also a description of the character of the machine which I am enabled to operate, viz.:

Name, ...
Address, ...

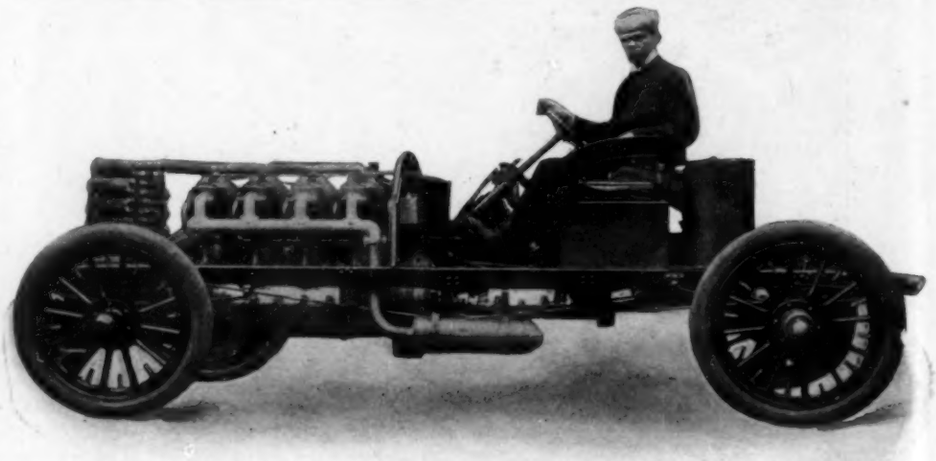
DESCRIPTION OF MACHINE.

Trade Name, ...
Style, ...
Motive Power, ...
(Fill in Electricity, Gasoline, Steam, one or all.)
Dated, ...1903.

..... Operator.

Newark Motorists Organize.

Temporary organization under the name of the New Jersey Automobile and Motor Club has been effected by the motorists of Newark as the result of a movement which began April 30. Temporary officers were elected as follows: President, R. C. Jenkinson; vice-president, Dr. H. C. Harris; secretary, E. E. Sargent; treasurer, C. R. Hoag. Constitution and by-laws were adopted limiting the membership to 500 and placing annual dues and entrance fees at $10 each. A committee was appointed to look into the practicability of a feature of the constitution providing for club protection for members against suits for damages. The committee on organization had sent out notices of the meeting to more than 1,700 automobilists throughout New Jersey and received from 75 to 100 replies.



L. P. MOORS IN THE 80-H. P. PEERLESS GORDON BENNETT RACER, PHOTOGRAPHED BEFORE LEAVING CLEVELAND FOR IRELAND.

CLUBLAND

NEW BUFFALO AUTO CLUB PROPOSES DISCIPLINE FOR SCORCHERS.

Special Correspondence.

BUFFALO, June 13.—The membership of the reorganized Automobile Club of Buffalo has more than doubled since the new club was formed at a meeting held in the Ellicott Club, on June 2, and now numbers more than 200. At a meeting of the board of governors held yesterday, a set of rules was adopted that will come before the entire membership of the club for final action next Wednesday.

The objects of the club are stated as follows in the constitution:

"To conduct a social and protective organization of all persons who own or are interested in motor pleasure vehicles; to cooperate in securing rational legislation and ordinances concerning the use of such vehicles; to protect the interests of owners and users of automobiles against unjust and unreasonable legislation; to assist in securing the proper punishment of those who flafrantly violate the laws or ordinances regulating the use of the highways, streets and parks, and to promote and encourage the construction and maintenance of good roads."

The rules provide for the disciplining of members who disregard the speed laws.

The active membership of the club is limited to 500. The qualifications are very liberally phrased so that any pleasure automobile or motor bicycle owner, user, maker or dealer is eligible; but it is expected that owners and users will be in the majority, and will control the administration of the club affairs.

The new club is made a reorganization of the old Buffalo Automobile Club by making its members, as well as those who applied for membership at the reorganization meeting, members of the new Automobile Club of Buffalo, and continuing in office until the annual election in October the temporary officers elected at the recent dinner.

More than 100 automobile enthusiasts attended the dinner, and 250 the business meeting, held at the Ellicott Club on June 2, making it the most important affair of the kind that had ever occurred in Buffalo. The meeting primarily grew out of opposition to the Doughty-Bailey Bill, and the indignation aroused by the signing of that act by Governor Odell. And in the three hours succeeding the dinner, the obnoxious law was thoroughly discussed, ridiculed and condemned. Clarence M. Bushnell acted as toastmaster, and speeches were made by W. H. Hotchkiss, Senator Henry W. Hill, Henry Adsit Bull, Police Justice Murphy and other prominent Buffalonians.

After a long discussion regarding the formation of a new club, the members of the governing board of the old club who were present resigned and new officers were elected unanimously as follows: President, William H. Hotchkiss; vice-president, Augustus F. Knoll; treasurer, E. R. Thomas; secretary, Frederick J. Wagner; board of governors, Lee H. Smith, Bert L. Jones, and E. H. Butler.

It was decided to charge no initiation fee, and to place the annual dues at $5.

Thriving Young Club in St. Paul.

The St. Paul Automobile Club has been organized with fifty members in St. Paul, Minn. Some of the best known business men of the city have joined it and all are enthusiasts in the new sport. Officers have been elected as follows: President, Paul Gotzian; vice-president, R. C. Wright; secretary, John Patterson; treasurer, Gustave Scholle. Several women will join the club, as there are a number of women motorists in the Saintly City. The machines owned by them are mainly electrics and not suited for the long club runs which it is proposed to hold during the summer, but it is expected that the women will prove efficient and satisfactory members of the organization, as their presence in parades and at local automobile shows will be a pleasing feature. More serious objects of the new club than the holding of parades, club runs and race meets, are the opposition to, and protection of members from, unjust and oppressive legislation and the securing of the establishment of more boulevards and of speedways where automobiles may be driven for pleasure and speed testing. It is expected also to hold joint meets with the automobile club of Minneapolis. The St. Paul club now meets in the wareroom of the local dealers, but looks forward to the time when it may have club headquarters of its own.

Los Angeles Club Movement Revived.

Special Correspondence.

LOS ANGELES, June 8.—Two years ago there was an automobile club here, but for lack of unity or progressiveness it was allowed to lapse into "innocuous desuetude." It was called the Automobile Club of Southern California. When the finance committee of the city council was recently considering a plan to tax all automobiles, the club movement again asserted itself in an endeavor to get the automobile users together to defend their rights. Enough influence was evidently brought to bear on the council to cause it to drop the scheme, but the club movement still continued, and now has been brought almost to a successful conclusion.

In the Los Angeles Automobile Club that has been formed there are thirty-eight charter members. The object of the club is to advance automobile interests in every way possible, and to secure justice for its members and others in the use of the highways in city and country. If it continues under the old charter it will be the pioneer organization of the State. It will endeavor to promote endurance runs, automobile shows, parades and other events to be governed by the national association, and the proceeds will be used for securing just legislation and good roads.

A harmonious meeting was held recently at the Westminster Hotel, at which Dr. Milbank Johnson outlined the purposes of the meeting, and an election of officers was held, resulting as follows:

President, Dr. Milbank Johnson; first vice-president, Frank Garbutt; second vice-president, H. C. Turner; secretary and treasurer, F. W. Flint, Jr.; and these officers, together with the following, will constitute the board of governors: F. O. Johnson, A. P. Fleming, Homer Laughlin and George Ellis. Sub-committees, to which will be delegated the work of forming the most effective organization, were appointed later, and these will work directly under the board of governors.

It seemed to be the consensus of opinion among those who had worked up the movement and signed the roll that it would be better to have the club purely an amateur one, and so it was decided that no one connected with the trade in any way would be eligible to membership.

Preparations are now making for an endurance run to Santa Barbara, to be taken probably some day this week. About a dozen automobilists will go from Los Angeles, and probably three or four from Pasadena. The trip will consume the better part of three days, probably, for the stragglers, as Santa Barbara is about 130 miles by road from Los Angeles, and while most of the roads are in fairly good condition, there are stretches of sand and mountain grades to be encountered and rivers to be forded. This route was chosen as a test of endurance. There is also some talk among club members and others of a run or endurance test to Yosemite some time this summer, but this will probably be made as a club run, with lots of time to spare to linger by the way.

Columbus Club Promoting Races.

Special Correspondence.

COLUMBUS, OHIO, June 13.—The Columbus Automobile Club has started a strenuous campaign to increase its membership to include all the automobile operators in the city. At a recent meeting of the club twenty-five new names were presented and accepted. Among the new members is Robert H. Jeffrey, the newly elected mayor of the city. This gives the club a total membership of fifty-two, which represents a fair percentage of the vehicles owned in the city. Dr. C. M. Taylor is president of the club. A committee has been appointed to arrange for a race meeting to be held some time within the next sixty days at Columbus Driving Park. The plan is to hold the meet very close to the date of the proposed Cleveland races, so as to attract the prominent racers who are expected to compete in that city.

THE AUTOMOBILE

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SATURDAY, JUNE 20, 1903.

MOTOR BICYCLE ENDURANCE RUN.

Plans have been completed for the holding of a Motor Bicycle Endurance Run from New York to Worcester, Mass., and return on July 3rd, 4th, and 5th. The pocket edition of the automobile is growing in popularity as its capabilities are coming to be better understood, and in no way could these be better demonstrated publicly than by the holding of such a contest. In the first endurance run, held on July 4 and 5, 1902, from Boston to New York, the motor bicycle made a very creditable showing, and since that time many improvements in frame construction and motor controlling mechanism have brought the vehicle forward to a secure place in modern rapid road travel.

The second contest will be held under the auspices of the Metropole Cycling Club and New York Motor Cycle Club, and it is scheduled to come off "rain or shine," showing the confidence of the promoters in the ability of the motor cycle to do efficient work under ordinary, every day conditions of travel. The rules for the race are simple and founded on common sense, and are intended to give the public a chance to compare the merits of stock motor bicycles rather than to exploit the possibilities of freak racing machines. All the machines entered must be equipped with cranks and foot pedals connected so as to be capable of propelling the machine when the engine is at rest. Two classes have been arranged: Class A, in which machines with motors of under 2½ horse power will be admitted, and Class B, which will embrace machines with motors of 2½ horse power and upwards. On the first day the run will be from New York to Springfield; on the second from Springfield to Worcester and then back to Hartford; and on the last day Hartford to New York. To prevent the endurance contest from becoming a mere road race, it is arranged to check the times of arrival at night controls not only at the stated boundaries but beyond, at points unknown to the contestants. This will prevent any racing for controls with long stoppages in sight of the finishing lines, while the riders wait until their schedule times have elapsed. All repairs must be made on the road, as the machines will be kept securely locked up at night.

The event gives promise of good results to the motor bicycle industry, and will undoubtedly be well supported. Entries close June 27, and applications can be addressed to E. L. Ferguson, Chairman of the Joint Committee, The Norwood, Seventh avenue and 126th street, New York.

AUTOMOBILES FOR INSPECTION PURPOSES.

The practical value of the automobile as a vehicle for quick and certain transportation for purposes of inspection by city and county officials is slowly coming to be recognized. For street cleaning and fire departments, road inspection and many other like purposes the automobile is peculiarly well adapted. In fact, for the first mentioned it is really an essential. It is an anomaly that street cleaning inspectors should now use, almost exclusively; the horse and buggy, which is one sure means of perpetuating the offensive surface conditions that such a department seeks to eliminate. Now that the New York department has decided to provide automobiles for the use of the inspectors of street cleaning, other cities may be expected to follow its example.

Public opinion seems to associate the automobile with pleasure outings, as in many isolated cases throughout the country the purchase of an automobile for official use has been followed by criticism and comment, as though its operation was indicative of junkets at the tax payers' expense. To those familiar with the reliability of the automobile and its great suitability to such uses, it is well known that it is only a question of time when the motor car will be used exclusively for business purposes, and the ownership of the horse and buggy will be associated with pleasure and country roads. Experiments now in progress in the post-office service will doubtless lead to an extensive introduction of the automobile in the collection and transfer and delivery of mail in cities.

In the heavier vehicles for municipal uses the trial of a self-propelled garbage cart in Brooklyn soon to be made will be watched with interest.

POSSIBILITIES OF PRESSED STEEL.

It was foreseen some time ago that in automobile construction as in bicycles, pressed steel would sooner or later displace forged steel to a large extent, with great resulting economy in weight and in machining. As with all pressed metal work the cost of plant necessary to this end is very heavy, and will wipe out the gains from improved product and lower labor cost unless great numbers of a given pattern can be produced before a change is necessary. Consequently the use of pressed steel has had to wait for standardized designs and large output.

Given a standard design however, one of the first questions to be asked is, Can it be made in pressed steel? Already the answer is "yes," in a surprisingly large number of cases. Boilers, burners, pressure tanks, fenders, steering wheels, mufflers, frame corners are some of the parts which are now rolled, pressed, or drawn from sheet steel. Even the main frame members are thus formed in the best class of cars, though this, owing to the extreme cost of the dies and the limited number produced of one pattern, is rather an added expense than an economy.

But there are assuredly other parts which can be pressed instead of forged in the solid, with a vast reduction in the cost of machining. Piano pedals, artillery wheel hubs, differential gear cases, conical clutch rims, brake drums, all these can be pressed, cold or hot, when the production warrants it, and Yankee ingenuity may even be equal to the task of forming the multitudinous levers, bell cranks, and what-nots in the operating mechanism in the same rapid and accurate fashion.

There seems to be no particular likelihood that the motor or the gears will prove amenable to this treatment, but it seems not impossible that the gear case may ultimately be formed in dies; and we are sure that Oldham couplings, outboard countershaft brackets, and sprocket pinions of pressed steel would be welcomed by every constructor. They sound pretty hard, and they will probably be a long time on the way, but they may arrive at last. Meanwhile we may look for pressed metal spring brackets, frame corners, radiator heads, and steps at no very distant date.

HARMSWORTH CUP.

America will not be represented in the motor boat contest for the Harmsworth cup, in Queenstown Harbor, July 11. This decision has reluctantly been compelled on the part of our owners and club men for the reasons that the time of preparation has been so short and no individual owner has cared to go to the expense of building and racing a boat for this one event. The

race, however, will have an international character, as already representatives of four nations have entered—Great Britain, France, Germany and Italy. It will be recalled by our readers that the race conditions are very liberal. Practically the only restriction is to length, which is fixed at 40 feet. An engine of any power, within the practical limitations compelled by the size of the boat, can be fitted. Each competing country has the privilege of sending three boats, and France has already held preliminary speed trials of the boats that will carry her colors in the race. The excuses which explain the absence of America this year will not apply next, and we suggest to the American Power Boat Association that it is not too early to begin the consideration of ways and means with a view to "lifting" the cup in 1904.

"It Is To Laugh."

At the recent floral parade in Brooklyn the Long Island Automobile Club, to make sure that the participants should not be arrested for exceeding the legal speed limit, secured two policemen in uniform mounted on bicycles to lead the thirteen vehicles as pace makers. The route of the parade covered just eight miles, and legally an hour or more should have been consumed in making the trip, but the cortege returned to the clubhouse only thirty-five minutes after starting. The club members are enjoying a hearty laugh at the expense of the police, who seem themselves to have no idea of the speed they are making when on a machine.

Special Race Track in England.

Continental automobile enthusiasts are now looking abroad for future race meets and long distance courses, such events being virtually prohibited at home on account of the intense feeling since the Paris-Madrid contest. No definite course has, however, so far been considered. The Automobile Club of Great Britain is building a private track near Purley, in England. It consists of a mile straightaway with a starting stretch of 300 yards. The track will have a small loop at one end and a large loop at the other. The entire course will be six and three-quarter miles in length. Its width over the mile straightaway will be seventy feet, and over the rest of the course fifty feet.

In Modern Phraseology.

He used to say, "just watch my smoke,"
When he wanted to be seen;
But now his chauffeur gets a poke,
And it's "smell my gasoline."

Charles Jarrott, of the British Gordon Bennett, team, is quoted as saying that "the successful driver must go cautiously but not too cautiously. The over-cautious man never wins, while the over-reckless man never finishes."

Long Island Steel Road Proposed.

Efforts are being made by Gen. Roy Stone to awaken interest in a steel roadway on Long Island, which he proposes shall be built as a double track road 112 miles long, from one end of Long Island to the other—from the eastern end of Blackwell's Island bridge to Montauk Point—thus placing the new Belmont track within fifteen minutes of the metropolis and Newport within four hours by automobile.

It is understood that Gen. Roy Stone has secured the approval of the National Association of Automobile Manufacturers and of the American Automobile Association. Financing the roadway is already under way.

Regarding details of the road Gen. Stone submits the following:

"The motorway should have a double track of steel plates, each track about five feet between centres, with ten feet space between the tracks and the same outside, making the whole roadway forty feet wide. Outside of this would be the hedges and a wire netting fence to keep out animals, large and small, and beyond that a row of trees on each side. All highways should be carried over the motorway by raising them, perhaps five feet, and depressing the motorway to the same extent.

"The entrances to the motorway would be by gates from the important highways, and these would naturally be the toll gates.

"Between midnight and morning the road could be used for motor freight vehicles for the farm and garden traffic.

"When used for formal races, all other traffic could be shut off.

"For the benefit of those not owning motor carriages or trucks, motor coaches could be licensed to run at a low rate of fare.

"Hotels at the terminus and inns at the toll gates would soon accommodate and attract travel.

"The cost of operation would be taking tolls and the care of the grass and hedges, little or no repairs being required for many years.

"Assuming, for a venture, that the local motor-carriage, coach and truck traffic of the island would pay these expenses, and that the 5,000 motor-carriages in New York would average a trip over the line every three months, at a toll of three cents per mile, the net earnings would be $134,400 per annum, without considering the regular summer motor travel from New York to the Long Island shores, nor the income from local, national and international motor racing, or the motor travel to the daily horse races at the Hempstead course, which will be brought within fifteen minutes by motor from the Fifty-ninth street bridge.

"The number of motor carriages in and about New York at present is stated to be 3,000. With the current rapid rate of increase, stimulated by the certainty of a free course for speed, the number would reach 5,000 or more by the time the road could be finished.

"Motor trucks, moving at twelve miles per hour, could cover eighty-four miles between 2 o'clock midnight and 7 o'clock in the morning. This would extend the available garden district of the island to double its present length, and, counting a width of five miles, would lead to the clearing, fertilizing and cultivation of 200 square miles of land now barren."

THE CHANGE GEARS REMOVED FROM WINTON'S "BULLET II."

Special Correspondence.

CLEVELAND, June 15.—It develops that Winton's Gordon Bennett racer, the "New Bullet," underwent several important changes just before it was shipped to the other side. The original design as described in THE AUTOMOBILE several weeks ago showed two speeds forward and a reverse. After his last trials in this country, Mr. Winton decided that in view of the high speeds being developed on the other side, it behooved him to do away with all unessential complication and weight. As the Irish course is comparatively level, there would be practically no occasion for using a low speed, so the entire variable gearing, weighing over fifty pounds, was removed and the car now has but one speed. There is a clutch from the motor shaft to the bevel pinion shaft and only one fixed ratio forward gear. The second lever was retained for a breaking lever.

George Collister, one of the local promoters of the Winton-Fournier match race, is awaiting with considerable anxiety the receipt of a cablegram from Charles Shanks, who is now in Ireland, relative to the authenticity of the report that Winton had repudiated the agreement to race Fournier.

Columbus Races for July 4.

Special Correspondence.

COLUMBUS, O., June 15.—About twenty-five automobiles took part in the first club run of the Columbus Automobile Club, held last Monday. The run was to Worthington, ten miles, where supper was served. A pacemaker was appointed to keep the speed down, and no one was permitted to pass him. A meeting of the club was held at the supper table at Worthington, and the committee appointed to arrange for a race meet reported that July 4 had been decided upon as the most desirable date for the meet, providing the club can secure the Columbus race track. A request has been made for the park on that date, but the matter has not yet been settled. The committee in charge of the meet is composed of Oscar Lear, William Neil, W. C. Anderson, William Frisbie and Harry Gates.

LABOR DEMANDS ADDED TO MAKERS' TROUBLES.

INDUSTRIAL GROWTH CONTINUES.

While Manufacturers Are Using Every Energy to Fill Orders, Workmen Demand Nine-Hour Day and Increased Wages—Other News from Center of the Industry.

Special Correspondence.

CLEVELAND, June 13.—Threats of labor troubles have been added to the embarrassments experienced by leading Cleveland manufacturers who are straining every nerve to take care of the accumulation of orders now on hand. Several of the local manufacturers have been approached by shop committees with demands for shorter hours and increased pay. In nearly every instance the demands have come from the men themselves, rather than from the union leaders representing any particular craft. The men know that the automobile manufacturers are in a more hazardous position than perhaps any other class of trade and that a strike would be most disastrous at a time when agents all over the country are demanding and begging for deliveries. Up to very recently the majority of manufacturers have been working their plants ten hours a day, with considerable overtime. The men now demand a nine-hour day and a 12 1-2 per cent. increase in wages, with time and a half for overtime. This means that not only must manufacturers curtail their output about 10 per cent., but must increase the expense for labor 12 1-2 per cent. In several cases these demands have been acceeded to and of course it cannot fail to mean a material increase in the cost of production.

BIG DEMAND FOR RUNABOUTS.

The demand for gasoline runabouts in this section may be described as nothing short of marvelous. In ten days recently, Manager Owen of the Ohio Oldsmobile Company, sold ninety machines, and the high water mark for one day was made recently when nineteen new machines were sold from the local store. It is safe to say there are close to 300 Olds in daily use in Cleveland and vicinity. "You see them everywhere" and the number is constantly increasing.

DAMAGE FROM NEGLIGENT SHIPPING.

The claim agent for a railroad running out of Cleveland recently received a claim for about $400 damages from a local manufacturer of automobiles. It was claimed that the manufacturer had shipped a fine touring car over the railroad in question and that the car had arrived at destination very much the worse for wear. The claim agent investigated and found that the car in which the machine had been shipped had in some way caught fire and the automobile had been badly damaged. More careful investigation revealed the fact that when the machine had been delivered for shipment it had simply been run into the car, boxed up and shipped without taking the trouble to empty the gasoline tanks of the fuel left after the run down to the station. The heat and the oscillation of the car had caused a generation of gas and someone with a match did the rest. As the railroad rules on this subject are very strict the claim agent declined to pay and the loss fell on the consignor.

LOCAL EXPANSION CONTINUES.

The American Ball Bearing Co. has broken ground for its new factory building, to be located on the Lake Shore & Michigan Southern Railway tracks, near Detroit Street, Cleveland. The fact that Walter Baker, of the Baker Motor Vehicle Company, is prominently interested in the American company, and has charge of many of the building negotiations, has given rise to the story that the Baker company would also erect a factory on the west side. However, the officials of the Baker company state that while additions to their plant will be necessary, it is hardly probable that they will abandon the present factory location.

When Charles Shanks moved into his newly completed Winton store last February, he did not imagine that the business would outgrow the establishment inside of three months. It appears that he was altogether too modest in his calculations, however, and with the increasing number of customers who want to store their cars in the garage, Mr. Shanks is finding it difficult to find space for his office furniture. So recently he devised a scheme whereby he could rent his present quarters to advantage and lease ground farther down town for the erection of a new building to have three times the capacity of the present quarters. The plan would have been carried out had there been no woman in the case. But there was. After they were ready to break ground she assumed her prerogative and changed her mind about leasing her land. So the deal fell through and Mr. Shanks will probably remain in his present quarters for the rest of the year.

The Cleveland Automobile Company, better known as A. L. Moore's company, recently found itself cramped for space, and has rented two additional storerooms in the neighborhood of its present quarters on Lake Street, Cleveland. One of these will be used for the painting and varnishing department, and the other for general manufacturing work. This will nearly double the company's facilities. At present it is averaging about two complete cars per day.

The Winton Motor Carriage Company has placed a contract for the erection of a new machine shop. This is in addition to the new buildings now under way and previously mentioned in these columns.

It is understood that a certain automobile wheel company, whose name will not yet be given out, is preparing to manufacture steel wheels, involving an entirely new principle. The plan is to use tubular spokes, the lower end formed in wedge shape and set into the hub, and the upper end attached to the rim by a mechanical contrivance which will be secure at all times, but which will make it possible to remove any individual spoke should it become bent or damaged. The Standard Welding Company will furnish the spokes.

A COMPLETE RECHARGING STATION SYSTEM FOR BOSTON.

Special Correspondence.

BOSTON, June 15.—The use of the electric vehicle will undergo a big boom here this summer as a result of the recent absorption of practically all the electric lighting and power companies within a radius of twenty-five miles of the Hub by the Edison Electric Illuminating Company, of Boston. This absorption has opened the way for the establishment of a system of fully forty electric recharging stations in Boston and a wide range of outside cities and towns, and the system, already partly ready for business, will receive accessions of new stations on June 15, and others about August 1. Most of these stations—in fact, all the new ones—will be open twenty-four hours a day every day in the year, by the mediation of coupon books similar to railroad mileage books, will in time be sold, if desired, the coupons to be good at any station in the big system; the price for electricity will be ten cents per kilowatt, with no charge less than thirty cents. The company has adopted an enameled sign in blue and yellow, with white lettering, which it intends to make well known as the sign of a recharging station. The company is establishing new stations by placing generator sets in livery stables and automobile garages, the idea being that these places are open all the time anyway, and that by attracting automobiles to livery stables the liverymen will be gradually induced to add automobiles to their horse business. The company expects to get its return, of course, but its system will make it possible to sell more electric vehicles in Boston, where public recharging stations have previously been confined to a very small district, and the public will doubtless appreciate the new facilities.

In addition, as a special object lesson in the use of electric vehicles for commercial service, the Boston Edison Company has ordered five commercial vehicles from the Vehicle Equipment Company of New York. The first of these to be shipped will arrive in Boston within a few days. It is a five-ton open truck, with electric winch in front, to be used for hauling heavy coils of wire and cable, and in hoisting poles or drawing wire or cable through conduits by its own power. A three-ton truck will follow in the course of two months, and later will come three lighter wagons, one capable of making

sixteen miles an hour to be used in emergency repair work on hurry calls, and two others of the delivery van type to be used as trimmers' wagons in the care and maintenance of the arc lamps in city service. Other electric wagons will be added subsequently until the entire Boston equipment of the company is electric. Superintendent Atkins has been using electric runabouts personally for inspection service for some time, and Charles L. Edgar, the leading spirit in the Edison combine in Boston, has long been an enthusiastic automobilist, but it has been only since the combination was effected that the company has seen its way clear to go into automobilism commercially on a large scale. It will cover the Boston district with printed matter relative to its plans within a week or two.

END OF THE TIRE MAKERS' SEASON DRAWING NEAR.

Special Correspondence.

AKRON, Ohio, June 15.—The local tire factories are still running day and night. There has been in the past few weeks a slight decrease in the rush which has been on since the first of January, but the busy season promises to run fully two weeks later than usual this year, taking it to the first of July or beyond. Jobbers' stocks have been increased slowly on account of the unusual demand and they have insistently clamored for more goods. The year's contracts are well-filled now and the closing up is finding the tire manufactures with less profits than they reasonably expected a year ago. This is due to the increase in the price of crude rubber which lately has again been in the ascending scale. Tire contracts are made by the year and it is out of the question for most manufacturers to buy sufficient rubber at the start to fill them. With Para rubber at 90 cents a pound and higher, much capital can easily be tied up in the purchase of raw material and it is not denied that some manufacturers cannot spare all the money necessary at one time. On the other hand, it is not considered good policy to contract for crude rubber for a year at a stated price as the figure at which this could be done would necessarily be high. So the tire manufacturer gets all the business he can and takes his chances. The fiscal year now closing simply has not been so favorable to him as some others.

At the annual meeting of the Buckmobile Company of Utica, held June 1, officers were elected for the ensuing year as follows: President, A. J. Seaton; vice-president, Samuel Campbell; secretary-treasurer, A. V. Brower; manager, W. H. Birdsall. The company expects by August 1 to have a capacity for turning out one machine a

The New York Auto Company, of New York City, has been incorporated with a capital of $30,000. Directors are Bernard Uphen, John Luril and J. J. Head.

OMNIBUS BILL FILED IN WASHINGTON AGAINST NEW REGULATIONS.

Special Correspondence.

WASHINGTON, D. C., June 15.—Carl J. Lockwood, the automobile dealer, who is endeavoring to have the courts restrain the District Commissioners from putting into effect the new automobile regulations, has in addition to his first bill of complaint, which was taken under consideration by the court after hearing arguments for and against it, filed a new bill of complaint on behalf of himself and of all automobile dealers, owners and operators in the city. About thirty-nine affidavits from different owners are appended to the amended bill. These affidavits state in effect that the running of automobiles on the public streets of Washington is in no way a hindrance or disturbance to any one; that the parties have read the various sections of the new regulations and declare them to be unreasonable; in fact, that no necessity exists for the authorities to put them into effect.

The amended bill particularly attacks the first five and the eighth sections. It states that section 1 takes away the right to propel automobiles in a lawful and proper manner and compels the parties to submit to an examination to obtain a permit from the authorities to do that which they have been lawfully doing for a long time. Section 3 is attacked because it is said to be unreasonable to compel automobilists not only to have suitable lamps, but to require that those lamps must be approved by the Board of Commissioners. It is contended that section 3, which requires, among other things, that a light be placed on the rear in close proximity to the gasoline tanks, is dangerous, and that the old regulations in regard to lights is sufficient. Section 8 is claimed to be unreasonable as a matter of law, as it would be a hardship to owners of automobiles to be in a position where they could be stopped by any police officer when they were running their automobiles in a lawful and proper manner.

Judge Gould immediately issued an order on the Commissioners requiring them to show cause why the relief should not be granted as prayed for, and fixed June 18 as the day for the making of the answer.

Plans for Newport Auto Track.

Special Correspondence.

NEWPORT, R. I., June 15.—Ever since the successful race meets held at Aqueduct Park here during the seasons of 1900 and 1901 there has been considerable talk of a permament track for automobile races exclusively. Plans and specifications for the construction of one of the finest tracks ever built are now before several millionaire automobilists. The site has already been selected, it being none other than the Country Club's golf grounds. W. K. Vanderbilt, Jr., Foxhall Keene, David Wolff Bishop, and a few other wealthy lovers of the new sport will undoubtedly figure in the promotion and successful conclusion of the long-talked of enterprise. As several hundred acres of ground are available, the track will probably be a two or three mile circuit.

Safeguarding the Gordon-Bennett.

Immediately after the abandonment of the recent Paris-Madrid contest there was some apprehension in automobile circles that the Gordon Bennett race, to be held in Ireland on July 2, would be prohibited by Parliament. Such action has not, however, been seriously considered.

In response to an inquiry, Mr. Wyndham, Chief Secretary for Ireland, replied that the selected course would be closed to traffic and to all persons excepting those directly connected with the contest.

To further safeguard the contestants, it has been decided by the Automobile Club of Great Britain and Ireland to start the vehicles at seven minute intervals, instead of one minute apart, as was originally intended. Further than this, no two vehicles will be permitted to leave a control at the same time; certain intervals (not yet decided) being allowed to elapse between departures. This will prevent any possible "bunching" toward the end of the race or when leaving a control. It is not to be understood that time gained in running up will not be credited to a contestant, but rather that such time will be added to the next control time, and will be further credited in the final figures.

The object of this new ruling is obviously to keep the vehicles separated, during the race, as nearly as possible the same distance that they were in starting. This idea properly carried out will permit each machine to make its very best record, while at the same time there will be no chance for accidents caused from starting the vehicles at too short intervals, or from "bunching" later in the race.

Another precaution has been taken to prevent accident by reducing the speed limit at first granted, within the various controls.

Circuit de Ardennes to Take Place.

Contrary to the published reports, the annual Circuit de Ardennes road race will take place as usual. The heavy cars will start on the morning of June 20, between 3 o'clock and noon, and the light cars will get away between 12.30 and 8 P. M. There will be thirty controls, and all dangerous parts of the course will be clearly marked by flags. Traffic will be suspended throughout the race, and cross roads will be barred.

As a result of the Paris-Madrid race the Circuit de Ardennes was declared off, but the promoters have been able to have it reinstated, owing to the entirely different conditions governing the contest.

The Indiana Automobile Club will devote more attention hereafter to the question of good roads, and an effort will be made to induce the Indianapolis papers to take up the work.

News and Trade Miscellany.

The Automobile Club of Pittsburg now has a membership of more than 100.

The Sheboygan (Wis.) Automobile Club has been organized with a membership of twelve.

The Automobile Club of Great Britain and Ireland has a membership of 2,180 members.

The Automobile Club of Worcester, Mass., is arranging for a club house in the center of the city.

Exports of automobiles from the United States for the year 1902 aggregated $1,069,782 in value, as compared with $367,371 in 1901, an increase of 300 per cent.

The Grand Rapids (Mich.) Automobile Club has elected officers for the ensuing year as follows: President, Charles B. Judd; vice-president, Dr. Perry Schurtz; secretary, L. W. Welch; treasurer, N. Fred. Avery.

The Oldsmobile Company of New York has been incorporated with a capital of $10,000. Object, manufacturing motor vehicles. The incorporators are William T. Rainey, of Cleveland; Roy A. Rainey, Lakewood, N. J.; and Raymond M. Owen, of New York City.

If the Gordon Bennett race never takes place, or must be run at 30 miles per hour and a dead heat for all the contestants, the preparations for the event will yet have done more for widening popular interest in automobiles than could be done by twenty-seven "reliability runs."

Home talent, as represented by Earl Kiser, with his stripped Oldsmobile, was the star attraction in the Decoration Day races at Dayton, Ohio. The machine was a regular road machine taken from stock and merely stripped for the occasion, yet with it Kiser won two of the principal events and established a track record of 1.34 for the mile.

The Utica (N. Y.) Automobile Club has been reorganized and has elected officers for the ensuing year as follows: President, Edward Bushinger; vice-president, D. D. Smith; secretary-treasurer, Harry Mundy. There are fifteen charter members. The club decided to join the New York State Association of Automobile Clubs and elected Albert J. Baechle a member of the executive committee of that organization.

New officers have been elected as follows by the Columbus (Ohio) Automobile Club: President, Dr. Clovis M. Taylor; vice-president, H. M. Gates; secretary-treasurer, Perry Okey. It is hoped that the membership will grow to 150 before long. A race meet is being promoted to be held at the Driving Park. A feature proposed for next winter is the reading of papers by members at the regular meetings on subjects of interest to motorists.

Movements to organize automobile clubs are now afoot in Redlands, Riverside and Santa Barbara.

A new ordinance regulating speed within the city limits and for numbering machines is being prepared by the City Attorney of Kansas City, Mo.

A moderate fire loss has been sustained by the Fanning Mfg. Co., automobile manufacturers, by a fire that damaged the building at 86 to 94 Pratt street, Chicago, on June 2.

Charles B. Shanks sailed for Ireland on June 6 to see the Gordon Bennett race, and to act as substitute for Alexander Winton in case any contingency arises to prevent the latter driving his own car.

At the Toledo (Ohio) Automobile Club's annual election, new officers as follows were elected: President, Dr. L. A. Liffring; vice-president, Peter Gendron; secretary and treasurer, George A. Palmer, Jr.

The regular weekly runs of the Automobile Club of America have been abandoned for the summer months, owing to the absence from the city of many of its members. One or two special runs to seaside resorts may be called, however, in July and August.

Although no action was taken regarding the annual race meet at the last meeting of the Rhode Island Automobile Club, it was the general sentiment among the members that it should be held much earlier than last year, and Labor Day is looked upon with much favor.

The assets of the Loomis Automobile Company, of Westfield, Mass., have been sold to the newly incorporated Loomis Autocar Company. The other claims have been settled by G. J. Loomis on a basis of 15 per cent., half to be paid one week from date of acceptance and the balance thirty days from date of first payment.

The Automobile Club of St. Louis, which is just entering on its second year of existence, has elected new officers, and now has a membership of nearly seventy. There is talk of securing a club house in Olive street, and an endurance contest and many club runs are planned for the summer. The officers are as follows: President, John S. Carter; secretary, E. H. Steadman; treasurer, Clarkson Potter.

The New York State Fair Commissioners have allotted two days to the automobilists at the annual exhibition next fall at Syracuse. Friday and Saturday, September 11 and 12, have been designated as automobile days, and the A. A. A. has issued its necessary sanction for those dates. The management hopes to secure attendance of the team which is to represent this country in the Gordon Bennett international cup race in Ireland July 2, as a drawing card.

Owing to rapidly increasing demand for leather gloves by automobilists, the Detroit Specialty Company has a force of 100 men employed in their manufacture.

The Automobile Club of Indiana has elected new officers as follows: President, Fred Ayres; vice-president, H. O. Smith; secretary and treasurer, J. A. McKim.

A member of the City Hall police detail has ordered a motor bicycle which he will use for catching bicyclists and motorists who exceed the speed limit in Minneapolis.

A. R. Pardington, of the Long Island Automobile Club, has been made chairman of the race committee of the American Automobile Association to fill the vacancy created by the resignation of W. J. Stewart on account of ill health and pressure of other business.

Following the changes in the constitution of the American Automobile Association, whereby individual owners are admitted to membership, Secretary Butler has mailed individual membership application blanks to all the clubs and active personal recruiting to begin at once.

A score of new members were voted in at a meeting of the Automobile Club of Maine, held in Portland, on June 3. It was voted also to arrange a hill climbing contest for July 4, or to take part in a parade if the city authorities hold one on that day, with a general club run afterward to some nearby seaside resort, where a shore dinner will be served.

Wm. E. Metzger, sales manager for the Cadillac Automobile Co., Detroit, Mich., sails for London in the near future, taking with him a complete line of Cadillac automobiles. While abroad Mr. Metzger intends to close the Continental agency for his company. He will be at the Hotel Russell not later than July 3, and invites correspondence at that address with parties interested in foreign representation for the Cadillac.

Owing to the success enjoyed by Thos. B. Jeffrey & Co., Kenosha, Wis., with the well-known Rambler gasoline runabout, it has recently been decided to increase the manufacturing facilities. Twenty-six acres of land immediately adjoining the present factory have been purchased and new assembling and shipping rooms will soon be erected. This additional building will be 250 feet square. Additional improvements at the factory include a half mile track and several artificial grades for the proper testing of new vehicles.

The Canadian department of customs has announced that automobiles (not new) in use by tourists going temporarily into Canada but not living there, may be passed upon deposit of an amount equal to the duty, subject to refund upon exportation within the time prescribed by the collector, not exceeding six months from date of arrival, writes Commercial Agent Johnson, from Stanbridge.